The current study had three aims: (1) to determine if proximal intergenerational transmission of affect occurs from mothers to their adolescent children and if it occurs along valence-specific pathways (e.g., maternal positive affect to adolescent positive, but not negative, affect), (2) to explore how maternal individual characteristics (i.e., depression) influence transmission, and (3) to explore how adolescent individual characteristics (i.e., depression, gender) influence transmission. One hundred thirty-five mothers (29-60 years old) and their adolescent children (12-16 years old) completed questionnaires and engaged in a problem-solving discussion. Results supported proximal intergenerational transmission down valence-specific paths. However, when prior adolescent state affect was added to the model, evidence for transmission of positive affect disappeared. Individual characteristics did not influence transmission. Given this evidence for proximal transmission of affect in a microsocial context, future work should examine proximal mechanisms of emotion socialization in the family and how these mechanisms predict long-term outcomes.
PROXIMAL INTERGENERATIONAL TRANSMISSION OF AFFECT

A Thesis

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Proximal Intergenerational Transmission of Affect

In their 1999 study of emotional experiences within the family system, Larson and Almeida explained, “Emotion transmission occurs when events or emotions in one family member’s immediate daily experience show a consistent predictive relationship to subsequent emotions or behaviors in another family member” (p. 6). Emotion transmission may occur between any family members but may have particularly robust consequences for certain members more than others. Specifically, transmission from parents to children and adolescents may be particularly likely because of the latter’s developmental stage and reduced autonomy. It is especially important to explore transmission during adolescence, when youth experience normative emotional changes due to shifts in perceptions of themselves and others (Holmbeck, Paikoff, & Brooks-Gunn, 1995) and when increased intensity of affect, particularly negative affect, occurs in parent-adolescent relationships (Flannery, Montemayor, Eberly, & Torquati, 1993; Laursen, Coy, & Collins, 1998). It is also of particular importance to examine transmission from mothers to their adolescent children. Although previous work indicates adolescents’ close relationships with both their mothers and fathers are associated with higher emotional well-being (Flouri & Buchanan, 2003), evidence also suggests mothers interact with their adolescent children more often and are more involved in caregiving than fathers (Collins & Russell, 1991), which may provide more opportunities for transmission. Observational research on emotion transmission between mothers and adolescent children at the proximal level (i.e., in the moment) is also needed because it allows a better understanding of the minute-by-minute interactions and dynamics that may subsequently influence adolescent general affect, behavior, and psychological well-being over time. Further, it fulfills Bronfenbrenner’s (1995) call for research focusing on proximal processes due to “…their substantive and theoretical significance as the mechanisms of organism-environment behavioral interaction that drive development” (p. 626). More work needs to be done to understand the process of proximal emotion transmission between mothers and adolescents, specifically what emotions are transmitted and how these emotions are felt by the adolescent. Additionally, individual characteristics of the mother and of the adolescent undoubtedly influence emotion transmission. The current study examined proximal transmission of affect from mothers to adolescents during a naturalistic problem-solving discussion and considered the relative influence of maternal depressive symptomatology, adolescent depressive symptomatology, and adolescent gender on transmission.
Intergenerational Transmission of Affect

Emotion transmission between parents and adolescents has mostly been examined distally, that is, determining how parental affect, as well as environmental factors and parenting behaviors, influence adolescent affect over time (e.g., Conger, Ge, Elder, Lorenz, & Simons, 1994). The little work that has been done on proximal intergenerational transmission suggests emotions most frequently flow from parents to adolescents (rather than vice-versa) and that negative emotions (i.e., anger, anxiety) are transmitted more frequently than positive emotions (i.e., calm, happy; Larson & Gillman, 1999). This is not to suggest the adolescent feels the exact same emotion as the parent. Rather, according to observational research, negative parental emotions create general distress (Cummings & Davies, 1994; Dix, 1991; Downey & Coyne, 1990; Patterson, 1980) and negatively influence adolescent adjustment over time (Conger, Patterson, & Ge, 1995). Importantly, previous work examined proximal transmission primarily through daily diary studies, thereby only providing evidence supporting daily patterns of transmission within the family system. For example, Almeida, Wethington, and Chandler’s (1999) daily diary study demonstrated that emotions are transmitted from the marital dyad to parent-child dyads but did not examine transmission at a micro-level or examine transmission in specific dyads. Thus, it remains unclear if transmission occurs moment-to-moment between mothers and adolescents and if proximal transmission occurs through valence-specific (i.e., positive affect, negative affect) pathways. The current study was the first to explore these questions. Given previous findings that unhealthy affective functioning predicts a host of negative psychological consequences for adolescents (e.g., increased likelihood of mood disorders; McMakin et al., 2011), work of this kind that examines intergenerational transmission of affect in the moment and acknowledges the possibility of valence-specific mechanisms not only deepens our understanding of affective functioning but may also provide clues for risk and resiliency factors for psychological disorders.

Research on transactional family processes has revealed that parent and adolescent affective behaviors build from one another and that both positive and negative affect are reciprocal in clinical and non-clinical samples (Kim, Conger, Lorenz, & Elder, 2001; Carson & Parke, 1996; Emde, Harmon, & Good, 1986; Kochanska & Aksan, 1995). In a nine-year longitudinal study, Kim and colleagues (2001) found that parents and adolescents experienced increases in negative emotion at similar rates. The more negative affect the adolescent expressed
to his or her parents in eighth grade, the greater the increase in parental negative affect expressed
to the adolescent in tenth grade, and vice versa. The transactional nature of transmission cannot
and should not be denied, but there is particular value in focusing only on transmission from
parents to adolescents. First, previous research suggests emotions are transmitted more
frequently from parent to child than the reverse (Larson & Gillman, 1999). Since the current
study was the first to explore proximal intergenerational transmission through valence-specific
pathways, it was prudent and logical to focus first on the most frequent transmission pattern (i.e.,
mother to adolescent). Second, the current study examined specific individual characteristics that
might influence proximal transmission. Being the first study of this kind, it was important
understand how these characteristics influence the most frequent transmission pattern before
considering transactional processes.

Proximal intergenerational transmission of affect may occur for a variety of reasons. Certainly,
intergenerational transmission of affect may be influenced by biological or genetic
factors. For example, psychological disorders characterized by pathological levels of negative
affect in addition to other symptoms (i.e., Major Depressive Disorder) have a level of heritability
of 31-42% (Sullivan, Neale, & Kendler, 2000), suggesting mothers and adolescents may have
similar response patterns to emotional cues. But, a variety of non-biological factors may also
explain the phenomenon. It may be the case that adolescents simply “catch” emotions from their
parents via emotion contagion (Hatfield, Cacioppo, & Rapson, 1993), or adolescents may learn
patterns of affective responses from interactions with their parents via processes of modeling or
reinforcement and punishment of emotion displays (i.e., emotion socialization; Eisenberg et al.,
1998; Halberstadt, 1991). Transmission differs from these other socioemotional processes in that
it involves the subjective emotional experience of the adolescent, which may or may not reflect
patterns of contagion and modeling. Specifically, emotion contagion is defined as “…the
tendency to automatically mimic and synchronize expressions, vocalizations, postures, and
movements with those of another person’s and, consequently to converge emotionally” (Hatfield,
Cacioppo, & Rapson, p. 153-154). Transmission may certainly include elements of contagion,
but it also goes beyond mere automatic mimicry and emotion convergence. If transmission were
pure mimicry, we would expect adolescents’ discrete affect to match their mothers’ discrete
daffect (e.g., maternal anger to adolescent anger). Although transmission may sometimes yield
this outcome, it is also possible that one maternal discrete emotion may yield a similarly-
valenced though qualitatively different emotional experience in the adolescent (e.g., maternal anger to adolescent anxiety; Larson & Gillman, 1999). In this sense, as articulated by Larson and Almeida (1999), “An emotion may be transformed when it is transmitted” (p. 14). Although many processes might explain how transmission occurs, two fundamental questions have yet to be answered. First, does proximal intergenerational transmission of both positive and negative affect occur from mothers to adolescents? And second, if transmission does occur, is it valence-specific? For example, does maternal negative affect influence only youth negative affect, or does it also influence youth positive affect? The first aim of the current study was to answer these questions.

Previous literature regarding these two affective systems provides support for both cross-valence effects and valence-specific relations. In particular, Green, Goldman, and Salovey (1993) presented evidence for a bipolar structure of affect, with positive and negative affect being two poles of the same dimension. According to this model, transmission may not be valence-specific, as an increase in one affective experience (e.g., positive affect) comes at the expense of the other affective state (e.g., negative affect). Other theoretical work and some empirical evidence, however, suggest positive and negative affect may be two separate dimensions (e.g., Diener & Emmons, 1984). Specifically, though happiness and sadness may have a unidimensional bipolar structure, positive and negative affect appear to be orthogonal (Tellegen, Watson, & Clark, 1999). The independence of affect has also been demonstrated by behavioral activation (related to positive affect) and behavioral inhibition (related to negative affect) systems, as the systems are neurologically distinct (Carver & White, 1994). Given this evidence, processes that influence transmission (e.g., emotion contagion, emotion socialization) may occur differently for positive and negative affect. The current study hypothesized that proximal intergenerational transmission of affect does occur and that it occurs through valence-specific pathways. Specifically, maternal expressed positive affect was hypothesized to induce adolescent state positive affect, and maternal expressed negative affect was hypothesized to induce adolescent state negative affect, but the two pathways were not expected to be significantly related (Figure 1). The current study was the first to suggest this pattern.

Influence of Maternal and Adolescent Characteristics

Transmission may occur more frequently in some families than others due to individual characteristics of the mother and the adolescent. Specifically, maternal depressive
symptomatology may influence affect transmission because of its influence on felt maternal affect or because of its influence on parenting practices (i.e., how affect gets expressed in context). Thus, the second aim of the current study was to look upstream from transmission and examine how maternal depressive symptomatology influences transmission. Broadly, maternal depression is associated with a host of negative parenting practices (e.g., hostile or coercive behavior, intrusiveness; see Lovejoy et al., 2000 for a meta-analysis). Depression may also influence other specific maternal affective behaviors. For example, depressed mothers display more anger, criticism, and negative affective facial expressions when interacting with their adolescent children than non-depressed mothers (Frye & Garber, 2005; Hops et al., 1987; Lovejoy et al., 2000), and depressed mothers are less likely to match their child’s affect and less likely to display positive affect than are non-depressed mothers (Field, Healy, Goldstein, & Guthertz, 1990; Hops et al., 1987). This may have many negative consequences for the adolescent. Previous work suggests maternal depression influences both maternal affect (as stated above) and children’s affect. Relatively speaking, children of depressed mothers have limited emotion regulation strategies (Silk, Shaw, Forbes, Lane, & Kovacs, 2006) and display disruptions in affective functioning compared to children of non-depressed mothers (Lovejoy et al., 2000). Similarly, stepwise multiple regression analyses have revealed that parental depression is one of the strongest predictors of adolescent affective disorders (Beardslee et al., 1996). Whereas the links between maternal depression and mothers’ own affect have been established, as well as links between maternal depression and child affective responses, the indirect paths from maternal depression to youth state affect via maternal expressed negative and positive affect have not been tested. The current study was the first to test these indirect paths (Figure 1). Taken together, previous research suggests maternal depression may influence intergenerational transmission of affect, such that an indirect effect of maternal depression on adolescent state affect occurs through maternal expressed affect.

Individual characteristics of the adolescent may also influence transmission. The third aim of the current study was to determine how adolescent depressive symptomatology and adolescent gender influence transmission. Based on the emotion inertia theory (Kuppens, Allen, & Sheeber, 2010; Kuppens, Oravecz, & Tuerlinckx, 2010) and the emotion context insensitivity theory (Rottenberg, Gross, & Gotlib, 2005), adolescent depressive symptomatology may influence how strongly maternal expressed affect is transmitted. The emotion context
insensitivity theory states that depressed individuals display reduced emotional reactivity to both positive and negative stimuli compared to individuals without depression (Rottenberg, Gross, & Gotlib, 2005; Bylsma, Morris, & Rottenberg, 2008). This reduced reactivity may be due to resistance to emotional change and “a decoupling of emotions from their adaptive function” (Kuppens, Allen, & Sheeber, 2010, p. 985), as hypothesized by the emotion inertia theory. Emotion inertia differs from emotion variability (e.g., Kuppens, Van Mechelen, Nezlek, Dossche, & Timmermans, 2007) in that inertia describes a particular slowed affective response pattern, not necessarily a reduced affective range (Kuppens, Allen, & Sheeber, 2010). McMakin et al. (2011) defined healthy affective functioning as “not...minimizing negative affect and maximizing positive affect, but rather flexibly modulating affect and responding to changing contextual demands” (p. 1214). Emotion inertia may be maladaptive because it causes difficulties in affect modulation. In fact, recent research has found associations between emotion inertia and reduced self-esteem (Kuppens, Allen, & Sheeber, 2010), increased neuroticism (Suls, Green, & Hillis, 1998), and depression in adolescents (Kuppens et al., 2012). Thus, adolescents with high depressive symptomatology may show dampened patterns of affective responses in relation to environmental stimuli (e.g., emotions expressed by a parent), thereby causing weaker transmission of positive and negative affect. The current study was the first to test adolescent depressive symptomatology as a moderator of the relation between maternal expressed affect and subsequent adolescent state affect (Figure 1). Previous literature has largely only considered adolescent depressive symptomatology post hoc and frequently suggests increased emotion reactivity to negative cues in depressed individuals due to difficulties in emotion regulation (e.g., Scher, Ingram, & Segal, 2005). However, given recent work demonstrating reduced reactivity in individuals with depressive symptomatology regardless of the valence of the emotion cue (Bylsma, Morris, & Rottenberg, 2008), the current study expected weaker intergenerational transmission of affect for adolescents with higher depressive symptomatology.

Adolescent gender may also influence the relation between maternal expressed affect and adolescent state affect because links between parenting, the family environment, and depression vary as a function of adolescent gender (Sheeber, Davis, & Hops, 2002; Kavanagh & Hops, 1994). These links may vary for a number of reasons. First, girls and boys appear to have different relationships with their mothers. Specifically, girls are more disclosing (Noller & Callan, 1990; Smetana, Metzger, Gettman, & Campione-Barr, 2006), spend more time with their
mothers (Montemayor, 1982), receive more monitoring (Jacobson & Crockett, 2000), have more conflict with their mothers (Montemayor, 1982), and have more calm discussions with their parents (Tesser, Forehand, Brody, & Long, 1989) than boys. Thus, girls may be more vulnerable to transmission because the content of their problem-solving discussions with their mothers may be deeper and therefore more emotionally salient. Or, over time, more emotion talk between mothers and their adolescent daughters may communicate to girls that they should be strongly attuned to their mothers’ feelings, thus experiencing stronger transmission. Second, boys gain autonomy sooner than girls (Huston & Alvarez, 1990) and may be less receptive to transmission. This finding is supported by the fact that negative effects of stress were buffered by peer relationships for boys and by family relationships for girls (Rubin et al., 1992), implying that boys rely less on their relationships with their parents compared to girls. Therefore, due to their increased autonomy and reliance on multiple relationships in their lives, boys may have stronger coping mechanisms to protect against negative affect transmission and be less receptive to positive affect transmission. Third, parents may socialize prosocial (e.g., empathic) behavior differentially based on gender (Hastings, McShane, Parker, & Ladha, 2007), which may cause girls to be more attuned to their mother’s affect, and therefore more receptive to transmission than boys. The current study expected gender to moderate the relation between maternal expressed affect and adolescent state affect, such that girls would experience stronger transmission. This moderation was expected to occur for transmission of both positive and negative affect.

**Current Study**

Taken together, the literature provides evidence that maternal depression influences maternal negative and positive affect, which may influence adolescent negative and positive affect through a variety of mechanisms (e.g., emotion contagion, emotion socialization, transactional processes, genetics, parenting practices). The goal of the current study was to examine proximal intergenerational transmission of affect down valence-specific pathways (Figure 1). This was accomplished by observing mothers and their adolescent children discuss problems (e.g., earning poor grades, failing to do household chores, fighting with siblings). Maternal expressed affect was observationally coded minute-by-minute across the discussion. Adolescents self-reported their state affect upon completion of the discussion. This methodology gave a clear picture of the ways affect is transmitted in an everyday task.
Individual characteristics of the mother and the adolescent were also hypothesized to influence transmission. First, as seen in Figure 1, maternal depressive symptomatology was expected to influence maternal expressed affect, specifically to be positively correlated with expressed negative affect and negatively correlated with expressed positive affect. Second, the indirect effect of maternal depression on adolescent state affect was hypothesized to occur through maternal expressed affect down valence-specific pathways. No crossover between the pathways was expected. Third, adolescent depressive symptomatology was hypothesized to moderate transmission, such that the relations between maternal positive and negative expressed affect and adolescent positive and negative state affect, respectively, would be weaker for adolescents with higher depressive symptomatology (Figure 1). Last, adolescent gender was hypothesized to moderate transmission, such that girls would be more strongly influenced by both maternal positive and negative expressed affect than boys (Figure 1).

Method

Participants

Participants were 135 mothers (29-60 years old, \( M = 43.9 \)) and their adolescent children (12-16 years old, 49% female) living near a Midwestern university. Participants were recruited through random selection from the enrollment roster of a public school district. Parents or legal guardians of potential participants received a letter explaining the study and a phone call requesting their participation. About 30% (n = 150) of the recruitment sample (n = 492) agreed to participate. Some adolescents participated with both parents (n = 24) or with just one parent, but due to theoretical reasons (i.e., larger body of previous research with which to make directional hypotheses regarding maternal expressed affect and intergenerational transmission) and power issues (i.e., too few fathers, n = 13), the current study utilized data collected only from those families for which a mother was present (i.e., either as a mother-adolescent dyad or mother-father-adolescent triad). Although 137 families had a mother participate, two cases were excluded because audio visual difficulties prohibited the coding of maternal expressed affect, resulting in the final sample consisting of 135 youth and mothers. Seventy-six percent of the mothers were married or remarried; 83% were biological mothers. One grandmother, two stepmothers, and two adoptive mothers also participated. Adolescents’ racial/ethnic background was predominantly Caucasian (86%), with 6% identified as African American, 4% as
Biracial/Mixed race, 3% as Asian/Asian-American, and one adolescent identified as Hispanic/Latino.

**Procedure**

Participants filled out consent forms and completed all tasks in a laboratory setting. Mothers and adolescents were asked to independently complete a series of questionnaires and then jointly complete four interactive tasks. The data for the current study comes from the second task in which mothers and adolescents had a seven-minute long problem-solving discussion. Earlier in the experiment, the mother and adolescent independently completed an issues checklist (Prinz, Foster, Kent, & O’Leary, 1979), reporting on the presence and intensity of certain conflicts in the home. Participants were assigned to discuss two issues they both reported as being at least mildly intense. The problem-solving task was most likely to elicit both positive and negative affect in mothers (thereby providing more opportunity for affect transmission) as opposed to the other experimental tasks which elicited more specific emotions (e.g., a success experience or a frustration/failure experience). Further, the problem-solving task was less controlled and more naturalistic and generalizable. Upon completion of the tasks, researchers debriefed participants about the goals of the study. Participants were given a list of mental health resources and were compensated $20.

**Measures**

*Maternal Depression*

Maternal depressive symptomatology was measured with the depression subscale of the Brief Symptom Inventory (BSI; Derogatis, 1993). The BSI is a 53-item self-report measure used to assess nine symptom dimensions along three indices of distress. Mothers used a scale of 0 (not at all) to 4 (extremely) to report on their symptoms. The BSI has been demonstrated to be internally consistent (all scales $\alpha \geq .71$) and has shown acceptable test-retest reliability (stability coefficients ranged from 0.68- 0.91; Derogatis & Melisaratos, 1983). It has been shown to be valid and reliable with adult clinical (e.g., Boulet & Boss, 1991; Myers et al., 2002), nonclinical (e.g., Pereda, Forns, & Pero, 2007), and cross-cultural samples (e.g., Aroian, Patsdaughter, Levin, & Gianan, 1995). The measure has also demonstrated high convergent validity with the Minnesota Multiphasic Personality Inventory (Derogatis & Melisaratos, 1983). The depression subscale of the BSI has six items. Sample items include “Feeling hopeless about the future” and “Feeling blue.” Cronbach’s alpha in the current sample was acceptable ($\alpha = .89$).
Maternal Expressed Affect

Maternal expressed affect was observationally coded minute-by-minute across the problem-solving discussion using the System for Coding Interactions and Family Functioning (SCIFF; Lindahl & Malik, 2001). According to its authors, the goal of the SCIFF is “to operationalize in terms of observable behavioral patterns those aspects of family functioning that have been deemed theoretically important to child mental health outcomes” (Lindahl & Malik, 2001, p. 75). The full coding manual includes six family-level codes, five parenting codes, and five child affect codes. The current study adapted child affect codes to code maternal affect. Specifically, the current study used the anger/frustration affect code to measure negative affect (Appendix A) and the positive affect code to measure positive affect (Appendix B). Coders used maternal tone of voice, facial expressions, body language, and verbal content to generate codes. Coders used a scale of 1 (very low) to 5 (very high) to rate the extent to which the mother displayed the given affect. Affect was coded minute-by-minute. Codes were averaged across the task to yield one overall maternal affect score for positive affect and negative affect respectively. A subsample (30%) of participants were coded independently by two trained coders to assess reliability. Excellent reliability was observed between coders (ICC for negative affect= .84; ICC for positive affect= .82).

Adolescent Depressive Symptomatology

Adolescent depressive symptomatology was measured using the Children’s Depression Inventory (CDI; Kovacs, 1992). The CDI is a 27-item designed to measure depressive symptomatology in children ages 7 to 17. For each item, participants were presented a series of three statements and asked to indicate which item best describes their experiences and feelings during the previous two weeks. For example, a participant was asked to choose which statement is true for them: “I feel like crying everyday”, “I feel like crying many days”, “I feel like crying once in a while.” At the Institutional Review Board’s and schools’ request, the item assessing suicidal ideation was removed. Responses were scored on a 0 (absence of that depressive symptom) to 2 (severe presence of that depressive symptom) scale. Cronbach’s alpha in the current sample was acceptable (α= .90). The CDI has shown good internal consistency and validity and somewhat unstable reliability. Specifically, tests of validity revealed the CDI was able to distinguish between psychiatric inpatients and nonclinical participants but not between depressed psychiatric inpatients and non-depressed psychiatric inpatients (Saylor, Finch, Spirito,
& Bennett, 1984). However, since the current study utilizes only a nonclinical, community sample, the CDI was deemed an appropriate measure of depressive symptomatology because it captures general emotional distress well.

Adolescent State Affect

Adolescents self-reported their state affect upon completion of the problem-solving discussion. Self-report measures were used so that we could assess the subjective experience of the adolescent upon completion of the task. We also measured adolescent state affect prior to the discussion. Adolescents used a scale of 1 (not at all) to 5 (extremely) to report the extent to which they felt excited, sad, angry, frustrated, and happy in the moment. The mean of youth’s rating on “excitement” and “happiness” was used as the measure of state positive affect (pre-task $\alpha= .85$; post-task $\alpha= .83$). The mean rating for “anger,” “frustration,” and “sadness” was used to measure state negative affect (pre-task $\alpha= .92$; post-task $\alpha= .86$). The measure for adolescent state negative affect (and not maternal expressed negative affect) included sadness because previous literature suggests emotion transmission from mothers to adolescents does not necessarily yield the identical emotion in the adolescent. Rather, parents’ negative emotions create general distress, including sadness (Cummings & Davies, 1994; Dix, 1991; Downey & Coyne, 1990; Patterson, 1980). By measuring adolescent state affect upon completion of the task, we were able to see how maternal affect across the task influenced adolescent affect prospectively rather than concurrently.

Adolescent Gender

During the questionnaire portion of the study, mothers completed a demographic form and indicated the sex of their adolescent children.

Results

Missing Data and Exclusion Criteria

There was sporadic item-level missing data for maternal depressive symptomatology and adolescent depressive symptomatology. Because all participants had at least 80% of the respective measures complete, total values for these measures were created by using mean item scores, respectively. Two other variables also contained missing data: adolescent state positive and negative affect ($n=3$). A Missing Value Analysis (MVA; SPSS, 2010) was used to determine the pattern of the missing data. The following variables were included in the MVA: maternal depressive symptomatology, maternal expressed negative and positive affect, adolescent
depressive symptomatology, adolescent gender, adolescent state negative and positive affect, and demographic characteristics. Little’s MCAR test ($p = .31$) suggested data were consistent with a pattern of missing completely at random. Expectation-maximization procedures were used to estimate missing values. Expectation-maximization procedures are superior to other data imputation strategies (e.g., mean substitution, regression substitution) which artificially reduce standard error. Although previous findings suggest expectation-maximization procedures may not be appropriate for data used in regression analyses because the algorithm produces standard errors that are too small (Graham, 2009), these procedures were used because the amount of missing data was very small.

As mentioned above, cases were excluded from analyses if audio visual difficulties prohibited the coding of maternal expressed affect ($n=2$). Also, cases in which only the father was present were excluded for theoretical and power issues ($n=13$). We also tested whether mean levels of study variables (and expressed maternal affect in particular) differed based on the presence ($n= 24$) or absence ($n= 111$) of the father in the discussion. A series of $t$-tests revealed no significant differences between cases with both the mother and father present and cases with only the mother present on any relevant study construct (all $t$’s < 1.91, all $p$’s > .06). As such, the presence or absence of fathers is not considered further in analyses.

**Data Analyses**

Preliminary analyses included obtaining descriptive statistics and determining the statistical normality of the variables. As would be expected given a community sample and a moderately negative experimental task, the following variables were substantially positively skewed: maternal depression (skewness statistic= 2.77), adolescent depression (skewness statistic= 1.84), and adolescent state negative affect (skewness statistic= 2.93). Although variable transformations reduced skewness, patterns of results did not change if variables were transformed or untransformed. Therefore, untransformed variables were used in all analyses to aid in interpretability of results.

The overall research model (Figure 1) was split into two models for analysis, one for each adolescent state affect outcome. All intercorrelations between variables can be seen in Table 1. Several notable bivariate relations emerged. Namely, maternal positive affect was significantly related to both adolescent positive and negative affect (albeit inversely for the latter) following the problem-solving task; maternal negative affect was significantly related to adolescent...
negative (but not positive) affect. Surprisingly, maternal depression was not significantly related to maternal or adolescent affect. In contrast, adolescent depression was significantly related to higher maternal depression and maternal and adolescent negative affect. Adolescent depression was also significantly related to lower maternal and adolescent positive affect. At the bivariate level, adolescent gender was only significantly related to maternal negative affect, such that mothers of boys expressed more negative affect.

Aim 1. The first aim of the study was to determine if proximal intergenerational transmission of positive and negative affect occurs and if it occurs down valence-specific pathways. Valence-specific transmission was tested separately for each adolescent affect outcome (i.e., for adolescent-reported positive affect and negative affect, respectively). Results for this aim are summarized in Table 2. Regression analyses predicting adolescent affect from maternal expressed positive and negative affect supported valence-specific transmission. Specifically, higher maternal expressed negative affect predicted greater adolescent state negative affect, but maternal expressed positive affect did not. Similarly, higher maternal positive affect predicted greater adolescent positive affect, but maternal negative affect did not.

Given that these were small effects, we wanted to run the most stringent test of valence-specific transmission and determine if results held if adolescents’ state affect prior to the task was included in the model. These results are also summarized in Table 2. Controlling for prior adolescent state negative affect, both maternal expressed negative affect and prior adolescent state negative affect significantly predicted adolescent state negative affect post-task; maternal expressed positive affect did not. Therefore, valence-specific transmission of negative affect occurred whether or not adolescents’ prior affect was taken into account. When adolescents’ prior state positive affect was included in the model, neither maternal positive affect nor maternal negative affect significantly predicted adolescent positive affect post-task; prior adolescent state positive affect did significantly predict adolescent state positive affect post-task. Overall, results supported proximal generation of positive and negative affect down valence-specific paths. However, when adolescents’ prior state affect was included in the model, evidence for transmission of positive affect disappeared.

Aim 2. The second aim of the study was to determine if the indirect effect of maternal depression on adolescent state affect occurs through maternal expressed affect. This was tested using the PROCESS macro for mediation (Hayes, 2013). Results for this aim are summarized in
Figure 2. For negative affect transmission, analyses indicated non-significant relations between maternal depressive symptomatology and maternal expressed negative and positive affect (“a” paths) and a non-significant relation between maternal expressed positive affect and adolescent state negative affect (“b_2” path). The relation between maternal negative affect on adolescent negative affect was significant (“b_1” path). The total effect of maternal depression on adolescent negative affect was not statistically significant. Analyses further revealed that the indirect effects of maternal depressive symptomatology on adolescent negative affect through maternal expressed affect were not significant. Results did not change if prior adolescent state negative affect was included in the model.

The pattern of results was the same for positive affect transmission. Analyses indicated non-significant relations between maternal depressive symptomatology and maternal expressed negative and positive affect (“a” paths) and between maternal negative affect and adolescent positive affect (“b_1” path). The relation between maternal positive affect on adolescent positive affect was significant (“b_2” path). The total effect of maternal depressive symptomatology on adolescent positive affect was not statistically significant. Analyses further revealed that the indirect effects of maternal depressive symptomatology on adolescent positive affect through maternal affect were not significant. Thus, and in contrast to hypotheses, results did not support the indirect effect of maternal depressive symptomatology on adolescent state affect through maternal expressed affect down valence-specific pathways. Since this aim was not supported, further analyses do not include maternal depressive symptomatology and instead focus only on adolescent characteristics that may influence transmission.

Aim 3. The third aim of the study was to determine if adolescent characteristics (i.e., adolescent depressive symptomatology, gender) influence transmission. Moderation analyses were used to test these effects separately for adolescent positive and negative state affect. Adolescent depressive symptomatology did not influence transmission of negative or positive affect, although a significant main effect of depression emerged such that higher depressive symptomatology was associated with higher adolescent self-reported negative affect post-task (Table 3). This relation did not change when controlling for prior adolescent state affect. Similarly, adolescent gender did not influence transmission of negative or positive affect (nor

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1 Maternal depressive symptomatology was also tested as a moderator of transmission. Moderating effects of maternal depressive symptomatology on the relation between maternal affect and youth affect were non-significant for all paths.
was there a main effect of gender in any analysis; Table 4). This relation also did not change when controlling for prior adolescent state affect. Thus, neither adolescent depressive symptomatology nor adolescent gender appeared to influence transmission of negative or positive affect.

**Discussion**

The three primary aims of this study were to (1) determine if proximal intergenerational transmission of positive and negative affect occurs from mothers to their adolescent children and if it is valence-specific, (2) explore how individual characteristics of the mother (i.e., depressive symptomatology) influence transmission, and (3) explore how individual characteristics of the adolescent (i.e., depressive symptomatology, gender) influence transmission. Evidence revealed support for proximal intergenerational transmission of positive and negative affect. This transmission appeared to be valence-specific. Utilizing the most conservative test of transmission (i.e., controlling for adolescent prior state affect), results supported transmission of negative, but not positive, affect down valence-specific pathways. Maternal depressive symptomatology, adolescent depressive symptomatology, and adolescent gender did not appear to influence transmission.

**Proximal Intergenerational Transmission of Negative and Positive Affect**

As hypothesized by aim 1, results supported proximal intergenerational transmission of affect. This finding is consistent with previous work on transmission at the distal level, which suggests parental affect influences adolescent affect over time (e.g., Conger et al., 1994). Placing our findings in context, it may be that distal transmission findings in the literature (e.g., Cummings & Davies, 1994; Conger, Patterson, & Ge, 1995) are reflective of or explained by moment-to-moment interactions between parents and their adolescent children. That is, over time, instances of proximal transmission may accumulate and explain distal effects.

Importantly, the current study extended the literature by examining affect-specific transmission (i.e., valence), and results supported proximal transmission of positive and negative affect down valence-specific paths. Specifically, maternal expressed negative, but not positive, affect significantly predicted adolescent state negative affect. The same pattern of results emerged for positive affect transmission (i.e., maternal positive affect predicted adolescent positive affect but not adolescent negative affect). In other words, across a seven-minute problem-solving discussion in a laboratory setting, mothers’ outward affective expressions
predicted their adolescent children’s felt emotion at the end of the task in a valence-specific pattern. This finding of valence-specific transmission supports previous theoretical work regarding the orthogonal structure of affect (e.g., Tellegen, Watson, & Clark, 1999) and provides evidence against the unidimensional structure of affect (Green, Goldman, & Salovey, 1993). Thus, emotion transmission may share some characteristics of other valence-specific systems. For example, like behavioral activation and inhibition systems, intergenerational transmission of negative and positive affect may rely upon neurologically orthogonal mechanisms (Carver & White, 1994). Further, just as different sensitivities of inhibition and activation are related to certain personality characteristics (i.e., high behavioral inhibition is related to high anxiety proneness, high behavioral activation is related to high novelty seeking; Carver & White, 1994), different amounts of positive and negative affect transmission in families may be related to important family characteristics (i.e., more frequent transmission of positive affect and less frequent transmission of negative affect in families may be related to more family savoring of positive events).

It is important to note that the most stringent test of valence-specific transmission (i.e., including adolescents’ prior state affect in the model) revealed evidence in support of transmission of primarily negative, but not positive, affect down valence-specific paths. This finding is particularly noteworthy given that, compared to other developmental periods, early adolescence is a developmental period in which elevated negative affect is normative or expected (Holmbeck, Paikoff, & Brooks-Gunn, 1995). Yet, mothers’ outward affective expressions in a seven-minute microsocial context influenced adolescents’ affect above and beyond adolescents’ own prior levels of emotionality. In contrast to this robust finding, when adolescents’ prior state positive affect was taken into account, evidence for valence-specific transmission of positive affect disappeared.

These disparate findings for negative and positive affect, however, are in line with previous findings that negative emotions are transmitted more than positive emotions in families (Larson & Gillman, 1999) and with findings across multiple contexts (e.g., memory, learning, major life events) that “bad” appears to be stronger than “good” (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Still, these findings raise the question of why transmission of negative affect is seemingly stronger than positive affect. Conceptually, from a functionalist perspective of emotion (Campos, Mumme, Kermoian, & Campos, 1994), adolescents may have
been more attuned to (and thus more receptive to transmission of) their mothers’ negative emotions because, in the problem-solving discussion, maternal negative emotions may have reflected opinions or themes incongruent with the adolescents’ goals and ego. Two additional theoretical bodies of work may also help explain disparate findings for transmission of negative and positive affect.

First, the outcomes of (and perhaps motivation behind) expressing emotions may differ based on the valence of the emotion. For example, expression of negative emotion has frequently been related to positive social outcomes in previous work, specifically to increased social support, establishment of new relationships, and increased intimacy in existing relationships (Graham, Huang, Clark, & Helgeson, 2008). In contrast, the expression of positive emotions seems to elicit less proximally crucial and perhaps more diffuse outcomes. For example, the expression of joy was hypothesized to “create the urge to play and be playful,” and the expression of contentment was hypothesized to “savor and integrate recent events and experiences creating a new sense of self and a new world view” (Fredrickson, 1998, p. 308). Although these are certainly important psychological outcomes, they may be less critical to the dyad in the moment. Thus, proximal transmission of negative affect would be expected to occur more frequently than proximal transmission of positive affect. In this sense, transmission can be conceptualized as a shared mechanism of communication between the mother and her adolescent child. If the primary purpose of proximal transmission of affect is social functioning, transmission would be stronger in situations in which social functioning is very important. Future work may test this idea by manipulating the degree of importance of social functioning (e.g., compare transmission of affect when mothers and children discuss problems the mother has at work versus when they discuss problems in their home).

Second, evolutionary principles may explain why negative emotions are transmitted more than positive emotions. As Nesse and Ellsworth (2009) explained, “Modern evolutionary approaches explain emotions as coordinated states that give fitness advantages in specific situations that recurred over evolutionary time” (p. 131). For example, transmission of negative emotion may alert the receiver to a threat; transmission of positive emotion would serve no such purpose. In this sense, stronger transmission of negative emotion may yield better evolutionary fitness than transmission of positive emotion. Therefore, in the current study, transmission of negative affect from mothers to their adolescent children was stronger than that of positive emotions.
affect. If the function of transmission of negative affect is indeed to communicate threat, transmission should be stronger in highly threatening situations. Future work may examine this question by testing valence-specific transmission in high-threat (e.g., evaluative problem-solving discussion) and low-threat (e.g., discussion about schedules) contexts. In sum, conceptualizing transmission as both a shared mechanism of communication and as a means of increasing evolutionary fitness may explain the current study’s finding of proximal intergenerational transmission of negative, but not necessarily positive, affect down valence-specific paths.

**The Role of Individual Characteristics in Transmission of Affect**

Although transmission may certainly occur more frequently in some families than others, individual characteristics explored in the current study (i.e., maternal depressive symptomatology, adolescent depressive symptomatology, adolescent gender) did not appear to influence transmission. Conceptually, these null effects suggest transmission occurs in similar ways for most families that share our sample’s demographic characteristics. That is, transmission may occur regardless of individual maternal and adolescent characteristics. Both theoretical and methodological reasons may explain these null effects. Theoretically, maternal depressive symptomatology may not impact transmission or may only have an impact on transmission when depressive symptomatology is very high. Despite observational evidence from clinical samples suggesting maternal depressive symptomatology is related to increased negativity (Lovejoy, Graczyk, O’Hare, & Neuman, 2000) and increased expressions of negative affect to children (Goodman, Adamson, Riniti, & Cole, 1994), in the current study, maternal depressive symptomatology was not related to expressed affect. Thus, the indirect effect of maternal depressive symptomatology on adolescent state affect through maternal expressed affect was not significant.

Similarly, adolescent depressive symptomatology did not influence transmission in the current study. It was hypothesized that transmission would be weaker for adolescents with higher depressive symptomatology because they would be less sensitive to emotional context and more emotionally inert (Bylsma, Morris, & Rottenberg, 2008; Kuppers, Allen, & Sheeber, 2010). Recent data, however, is beginning to suggest that context insensitivity may only occur for individuals currently experiencing a Major Depressive Episode or may be mood-state dependent (e.g., Salomon et al., 2013). In fact, other data actually suggest depression is associated with increased lability of affect (Silk et al., 2011; Thompson et al., 2012). As such, it may be that
emotional inertia only matters for negative affective functioning in highly depressed individuals, therefore having little impact on everyday experiences of intergenerational transmission of affect in more community-based samples, such as the sample in the current study.

Additionally, adolescent gender did not moderate transmission. Conceptually, adolescent gender may not have influenced transmission in the current study because we only examined the transmission of maternal affect (with the number of fathers in the study too few to conduct inferential statistics). Recent findings suggest fathers tend to socialize emotions differentially based on child gender but mothers may not (Chaplin, Cole, & Zahn-Waxler, 2005). Therefore, although sons and daughters may have different relationships with their mothers (e.g., girls disclose more information and have more conflict with their mothers than boys; Noller & Callan, 1990; Montemayor, 1982), the fact that mothers socialize emotions similarly regardless of adolescent gender may be more applicable to transmission processes. Indeed, our data would suggest that transmission may occur in similar ways for girls and boys. At the bivariate level, mothers did express more negative affect to their sons than to their daughters, but despite this finding, the strength of transmission did not differ based on adolescent gender.

Methodological reasons may also help explain these null effects. Methodologically, the task (i.e., engaging in a seven-minute problem-solving discussion) was designed to be naturalistic and elicit moderate levels of positive and negative affect so that transmission could be observed. However, given the substantial positive skew of adolescent state negative affect (skewness statistic= 2.93), it seems likely that the task was not overtly negative to most adolescents. The skew of the variable did not influence results (i.e., transforming the variable to reduce skewness did not change results), but it may indicate underlying patterns of limited emotional variability during the task. In fact, the task asked participants to discuss issues that were previously conflictual and made them feel upset in the past. Therefore, some participants may have already resolved the problem or discussed it so many times that the problem was no longer emotionally salient. Although transmission certainly seems to occur regardless of emotional saliency, the moderating effects of adolescent depression and adolescent gender on transmission may only emerge during highly emotional times. That is, whereas those adolescents low and high in depressive symptomatology may be equally receptive to proximal intergenerational transmission of affect during minor conflicts, differences may begin to emerge in highly emotional contexts. Similarly, adolescent boys and girls may be equally receptive to
transmission in less emotional contexts, but differences may emerge in more emotionally-charged tasks. Future studies may consider using tasks designed to elicit higher levels of positive and negative affect (e.g., dyadic affect induction tasks).

**Limitations and Future Directions:**

There were several limitations to the current study. First, the study was limited by a relatively homogenous sample. Eighty-six percent of the sample was Caucasian, which limits the generalizability of our findings. Results may be different for families of different ethnic, racial, or socio-economic backgrounds. For example, previous research suggests that, compared to Caucasian adolescents, African American adolescents’ expression of depressive symptomatology involves more irritability, Asian American adolescents’ symptom expression involves more sadness, and Latin American adolescents’ symptom expression involves more diminished energy and somatic symptoms (Anderson & Mayes, 2009; Choi & Park, 2006). Thus, adolescent depression may influence transmission differently based on a participant’s culture. Second, the current study utilized a broad definition of negative affect for observational coding. Although the use of observational coding was a strength of the current study and fulfilled previous researchers’ calls for reduced reliance on self-report data (e.g., Bronfenbrenner, 1995), examining micro-level discrete emotions may better elucidate how proximal intergenerational transmission of positive and negative affect occurs. Similarly, stronger effects may have emerged if transmission were studied minute-to-minute instead of across the seven-minute task. Last, the current study did not examine other important moderators which may have influenced transmission. For example, the dyad’s affective flexibility may influence transmission. Low dyadic affective flexibility may increase the amount of time the dyad is emotionally “stuck,” which may strengthen transmission. This may be especially important to consider for participants high in depressive symptomatology, as preliminary reports indicate dyadic interactions between depressed parents and their children are less positive (Tronick & Reck, 2009) and less affectively flexible (Lunkenheimer, Albrecht, & Kemp, 2012) than interactions between non-depressed parents and children. Utilizing state space analyses of affective flexibility (e.g., Hollenstein & Lewis, 2006) as a moderating effect of intergenerational transmission may have improved the current study.

The current study’s evidence of moment-to-moment intergenerational valence-specific transmission may have several clinical implications. Namely, this work may help elucidate the mechanisms by which patterns of healthy and unhealthy affective functioning develop in
adolescence. For instance, proximal transmission may lead to more daily occurrences of positive emotions and fewer daily occurrences of negative emotions for adolescents. Similarly, proximal transmission of negative affect in particular may lead to pathological levels of negative affect in adolescents’ daily lives and interactions, perhaps serving as a risk factor for psychological disorders characterized by high levels of negative affect (e.g., depression, anxiety). Valence-specific proximal transmission may also have important long-term consequences. For instance, over time, more occurrences of positive emotions may broaden and build cognition, leading to increased personal resources (Fredrickson, 2001) and abilities to recover from stress (e.g., Ong, Bergeman, Bisconti, & Wallace, 2006). Or, transmission of positive affect may yield more positive parent-adolescent interactions over time, perhaps fostering a warm, intimate parent-adolescent relationship, which is associated with higher adolescent self-esteem, less depression (Field, Lang, Yando, & Bendell, 1995), as well as more positive adjustment (Herman-Stahl & Peterson, 1996). Given the current study’s finding of transmission of negative, but not positive, affect, if interventions seek to increase positive affect transmission in order to attain these positive long-term consequences, attempts at transmission may need to be deliberate and characterized by very high levels of positive affect. In this way, proximal transmission provides clues for both risk and resiliency factors for psychological disorders both short-term (e.g., pathological levels of negative affect) and across the developmental spectrum (e.g., development of internal and social resources, developmental cascades involving affect regulation over time).

The current study suggests several future directions for research. Specifically, like behavioral activation and inhibition systems, transmission of positive and negative emotions may be related to distinct patterns of neural functioning, though this has not yet been explored. Similarly, because affect transmission appears to be valence-specific in some circumstances, the underlying processes involved in transmission (e.g., emotion contagion, emotion socialization) may also occur through valence-specific mechanisms. Future research should employ novel methodology (e.g., psychophysiological measures, observational coding in natural settings) to explore these questions. Additionally, future research should consider the transactional nature of parent-adolescent relationships and test adolescents’ influence on maternal and paternal affect. It remains to be known whether transmission of positive and negative affect occurs from adolescents to their maternal and paternal caregivers. The pattern of results may be similar to that of the current study in that transmission may occur down valence-specific pathways and be
independent of individual characteristics, or transmission from adolescents to their parents may operate completely differently.

In sum, the current study provided evidence for valence-specific proximal intergenerational transmission of positive and negative affect when adolescents’ prior affect was not considered. When adolescents’ prior affect was taken into account, evidence for valence-specific transmission of positive affect disappeared. Transmission was not influenced by maternal depressive symptomatology, adolescent depressive symptomatology, or adolescent gender. Thus, the current study supports future research on valence-specific affective mechanisms and suggests further attention to the transactional nature of parent-adolescent relationships.
References


Table 1
*Intercorrelations, Means, and Standard Deviations of Demographic Variables, Maternal Expressed Affect, Adolescent State Affect, Maternal Depressive Symptomatology, Adolescent Depressive Symptomatology, Adolescent Gender, and Adolescent Prior State Affect (N = 135).*

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*Note.* NA = negative affect. PA = positive affect. Gender was dummy coded as males= 0, females= 1. *p < .05. **p < .01.
Table 2


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*Note. NA= negative affect. PA= positive affect. Adol= adolescent. *p <.05 **p <.01.
Table 3

Moderating Effect of Adolescent Depressive Symptomatology on Proximal Intergenerational Transmission of Positive and Negative Affect (N= 135).

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*Note.* NA = negative affect. PA = positive affect. Dep = Depressive symptomatology. Adol = adolescent. *$p < .05$ **$p < .01$.
### Table 4

*Moderating Effect of Adolescent Gender on Proximal Intergenerational Transmission of Positive and Negative Affect (N= 135).*

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*Note. NA= negative affect. PA= positive affect. Gender was dummy coded as males= 0, females= 1. *p <.05 **p <.01.*
Figure 1.
Research Model.

*Note.* Dep Sx= depressive symptomatology. PA= positive affect. NA= negative affect. Adol= adolescent.
**DV: Adolescent State Negative Affect**

- $a_1 = .07 (.06)$
- $a_2 = -.09 (.06)$
- $b_1 = .38 (.13)^*$
- $b_2 = -.22 (.13)$
- $ab_1 = .03, 95\% CI [-.0034, .1154]$
- $ab_2 = .02, 95\% CI [-.0017, .0695]$
- $c = .02 (.09)$
- $c' = -.02 (.09)$

**DV: Adolescent State Positive Affect**

- $a_1 = .07 (.06)$
- $a_2 = -.09 (.06)$
- $b_1 = -.17 (.20)$
- $b_2 = .45 (.20)^*$
- $ab_1 = -.01, 95\% CI [-.0937, .0107]$
- $ab_2 = -.04, 95\% CI [-.1269, .0029]$
- $c = .18 (.14)$
- $c' = .24 (.14)$

*Figure 2.*

Indirect effect of maternal depressive symptomatology on adolescent state affect via maternal expressed affect (N=135).

*Note.* Dep Sx = depressive symptomatology. PA = positive affect. NA = negative affect. Adol = adolescent. Beta and standard error values are reported. $^*p < .05$. 
Appendix A.

Maternal Negative Affect Code (SCIFF Anger/Frustrated Affect Code)

ANGER AND FRUSTRATION

This code assesses the overall level of negative affect (e.g., anger, frustration, tension, and irritation) expressed by the parent through tone of voice, facial expressions, and body language during the interaction. Consider what the parent says as well as how s/he says it. Parents may express frustration or tension through verbalizations (e.g., that is enough, we are done with this conversation), overt behavior (e.g., yelling), or emotional tone (e.g., frustrated, impatient, irritated, or angry).

The lower end of this scale is characterized by an absence of negative affect behaviors. However, this does not mean that the parent is necessarily expressing positive affect. In fact, a parent who expresses little affect at all (i.e., unemotional, flat affect) will score low on both negative and positive affect. At the higher end, the parent shows frustration, tension, irritation, or anger.

1 - Very Low. The parent expresses virtually no negative affect. The parent very rarely (if ever) expresses frustration, tension, or anger. If the parent shows rare glimpses of frustration or anger, these are fleeting and are extremely mild in intensity (i.e., barely noticeable).

2 - Low. The parent expresses a small amount of negative affect, such as occasional frustration, tension, anger, or irritation, that is mild in intensity. The parent expresses one or two noticeable displays of frustration or irritation but not for a prolonged duration.

3 - Moderate. The parent expresses some negative affect, including some frustration, tension, anger, or irritation that is clear and obvious, but not very intense. The parent occasionally expresses frustration or irritation (i.e., three to four noticeable displays or negative affect that persists for approximately 50% of the coded interaction).

4 - Moderately High. The parent expresses some negative affect that is clear, obvious, and of mixed intensity (e.g., for the most part the parent’s negative affect is mild but clearly escalates at times). At no time does the negativity get out of control. The parent may express frustration or irritation several times or negative affect that persists for approximately 75% of the coded interaction.

5 - High. The parent expresses frequent negative affect, which is clear, obvious, and of moderate to high intensity. The parent may repeatedly express displays of frustration or irritation (approximately the entire coded interaction). The parent’s negativity may appear to be on the verge of being out of control.
Appendix B.

Maternal Positive Affect Code (SCIFF Positive Affect Code)

POSITIVE AFFECT

This code assesses the degree of positivity expressed in the parent's tone of voice, facial expressions, and body language on a scale from little (or no positive affect) to frequent expressed positive affect. Positive affect may be expressed through behaviors such as affection, laughter, and smiling.

The lower end of this scale is characterized by an absence of negative affect behaviors. However, this does not mean that the parent is necessarily expressing positive affect. In fact, a parent who expresses little affect at all (i.e., unemotional, flat affect) will score low on both negative and positive affect. At the higher end, the parent shows an easy, relaxed manner, and may laugh, smile, or be affectionate.

1 - Very Low. The parent expresses very little to no positive affect, maintaining a flat, neutral, or negative demeanor throughout the interaction. The parent very rarely (if ever) seems to really be enjoying the interaction. Few (if any) smiles are displayed, and the parent in general does not seem relaxed. The parent often seems disengaged or withdrawn from the interaction.

2 - Low. The parent expresses some positive affect, showing brief periods of enjoyment, but this is not the parent's general state. The parent may at times seem neutral, disengaged, or withdrawn from the interaction.

3 - Moderate. The parent expresses a moderate amount of positive affect and is able to display some enjoyment of the interaction. The parent may be neutral for some portions of the interaction (such as seeming disinterested, disengaged, and/or withdrawn) but will smile, laugh, or be affectionate on occasion with his/her child.

4 - Moderately High. The parent expresses frequent positive affect (e.g., smiles, is affectionate and warm, and seems comfortable, relaxed, and at ease in the discussion). There may be occasional moments of mild frustration, disengagement, or withdrawal from the interaction. There is an underlying sense of warmth, connection, and comfort between the parent and the child.

5 - High. The parent expresses a great deal of positive affect (e.g., smiles, is affectionate and warm, and seems comfortable, relaxed, and at ease in the discussion). The parent seems to enjoy being with his/her child. The parent seems to generally be in a good mood, though may become a bit disinterested on occasion. The parent seems relaxed most of the time. There is an underlying sense of warmth, connection, and comfort between the parent and both of his/her parents.