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Relations between Fathers' and Mothers' Infant Engagement Patterns in Dual-Earner Families and Toddler Competence

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Abstract

This study examined the trajectories of time new fathers and mothers in dual-earner families ($N = 178$) reported spending in developmentally appropriate positive engagement activities over the first 9 months of their child's life on both work and non-workdays. We also explored how paternal and maternal engagement patterns in infancy were associated with children's later social-emotional competence during toddlerhood ($M = 25$ months). Utilizing latent growth models, we found that, compared with mothers, fathers spent significantly less time engaging with their infants; however, both parents increased their engagement over time at relatively the same rate. Fathers' rate of increase over time and mothers' initial starting point of engagement on non-workdays were associated with toddlers' attention and mastery motivation. Findings are discussed with regards to what they mean for dual-earner couples and fathers' investment in their offspring, highlighting what they may imply about the second demographic transition and family functioning.

Keywords

Dual-Earner families; Father Engagement; Social-Emotional Competence; Transition to Parenthood; Time Diaries

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Research has consistently demonstrated that greater parental involvement with children is associated with more positive child development (Cabera, Shannon, Tamis-LeMonda, 2007; Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008). Although the quality of parenting is undoubtedly important, the amount of time parents spend in developmentally appropriate activities may be just as important for child adjustment (Brown, Mangelsdorf, & Neff, 2012; Cox, Owen, Henderson, & Margand, 1992; Pleck, 2010). However, few studies have examined both maternal and paternal engagement patterns over time (Amato & Rivera, 1999; for a notable exception, see Cabrera et al., 2007), and variations in parents' engagement over work and nonworkdays (McBride & Mills, 1993; Parcel & Menaghan, 1994), particularly during the child's infancy, a period of rapid developmental change in which the foundations for later development are laid (Lamb, Bornstein, & Teti, 2002). Our study expands on this limited research by examining and comparing the trajectories of time new fathers and mothers in dual-earner families spent in developmentally appropriate positive engagement activities over the first 9 months of their child's life on both work and non-workdays. In addition, we explored how paternal and maternal engagement patterns in infancy were associated with children's later social-emotional competence during toddlerhood, at approximately age two.

The changing demographic and cultural trends dubbed the second demographic transition (SDT) (Goldscheider, 2012) invite examination of its implications for family functioning and child well-being. The SDT refers to ideological, rather than structural change, and associated demographic trends include low fertility, delayed marriage and childbearing, union instability and nonmarital childbearing (Lesthaeghe, 2010). These trends have lead scholars of the SDT (Lesthaeghe, 2010; Maslow, 1954) to argue that individual needs will increasingly take precedence over family commitments, as greater economic development supports an individualistic culture that emphasizes personal satisfaction. In this view, the normative ordering of the life course that once revolved around union formation and childrearing becomes increasingly individualistic, resulting in multiple and divergent pathways to union and family formation that are often fraught with instability, reducing investment in children by both parents, and particularly by fathers.

However, others who emphasize the ongoing gender revolution as spurring current family-related demographic changes (Goldscheider & Waite, 1991) have argued that structural changes in gender relationships underlie current demographic trends, creating an environment of uncertainty with regard to expectations surrounding men's and women's family roles. In this view, men's and women's needs and expectations for family involvement will eventually coincide, and parents, and particularly fathers, will continue to invest in family life, perhaps in more equal proportions than in generations past. Indeed, Hays (1997) has argued that the cultural pressure to be engrossed in parenting, i.e., "intensive mothering" and "involved fathering," encourages both parents to be highly involved in childrearing, and today's parents are urged to devote considerable time to stimulating their child's development via positive engagement activities (Wall & Arnold, 2007). However, according to Goldscheider (2012), key to whether the demographic and cultural trends of the SDT will ultimately strengthen or weaken families is whether the second part of the gender revolution will be fully realized in the home. This realization requires the integration of men's and women's work and family lives, investing in the care

and stimulation of children in more equitable ways (Goldscheider, 2012). In fact, even as fathers have increased their involvement with children (Bianchi, Robinson & Milkie, 2006) in response to ideological (Pleck & Pleck, 1997) and structural change (Bianchi, 2000), fathers continue to be less involved in childrearing than mothers, even when mothers are employed full-time (Craig, 2006).

Beliefs about intensive parenting are particularly salient for middle-class families (Lareau, 2002), and may present particular struggles for families with employed mothers (Johnston & Swanson, 2006). Our sample of dual-earner, predominately highly educated different-sex couples transitioning to parenthood provided an excellent context in which to examine the extent to which fathers and mothers are investing in their children via positive engagement, and what these variations, on both work and non-workdays, may mean for their children's early development of critical social-emotional competencies. This investigation also provided additional insight into which theoretical lens more accurately captures the current parenting context in dual-earner families, i.e., SDT or the on-going gender revolution, and afforded a glimpse of what the implications could be for child social-emotional competence.

Fathers' and Mothers' Engagement Patterns

In 2010, Pleck reconceptualized the widely used Lamb, Pleck, Charnov, and Levine (1987) model of father involvement that included dimensions of engagement, responsibility, and accessibility. This reconceptualization, based on research demonstrating the importance of fathers to children's development, emphasized time spent in enriching, stimulating activities that promote positive child development as distinct from the qualitative components of involvement. Correspondingly, Pleck (2010) re-termed the *engagement* domain *positive engagement*. Positive engagement activities in infancy includes behaviors such as playing, reading, singing, and talking with the child.

Regarding mothers' and fathers' engagement patterns, some have argued that there has been a cultural shift in expectations surrounding fatherhood, partly driven by the mass entrance of mothers of young children into the workplace (Gerson, 2009). Hence "involved fathers" are portrayed and expected to be emotionally involved, nurturing, and committed to investing time with children, and are often seen as equally capable as mothers with regard to childrearing (Wall & Arnold, 2007). Indeed, research by Cabrera, Hofferth, and Chae (2011) using nationally representative data has demonstrated that fathers, particularly well-educated fathers, are highly engaged in their infants' lives. However, few studies have used detailed time-use data to compare fathers' and mothers' involvement in positive engagement activities with infant children. Studies of parents with children ranging from 0-12 years of age have demonstrated that fathers are less involved in engagement activities than mothers (Craig, 2006; McBride & Mills, 1993). However, more consistent with the stereotype of "dad as playmate", McBride and Mills (1993) found that although mothers reported significantly higher rates of parental involvement overall, fathers reported a greater proportion of time in play activities with preschoolers.

In addition, recent research from Sweden, a place that arguably has much more egalitarian policies and perhaps cultural beliefs regarding parents' roles (Wells & Sarkadi, 2012), still

demonstrates that fathers are less involved, compared with mothers, in infant childrearing. Although there may be a cultural shift supporting and emphasizing “involved fathering,” there may be a parallel emphasis on mothers’ involvement. Intensive mothering, as Hays (1997) described, is an ideology of self-conscious, expert-guided commitment to childrearing – a willingness to sacrifice personal time, leisure, and even self-care for the good of the child. Indeed, working mothers have increased their time in engagement with their children in recent decades despite working more hours outside the home than ever before (Bianchi et al., 2006). Hence, even though there has been some evidence of cultural change over the past decades, which may prioritize parents’ engagement with their infants, it is unclear how much fathers’ and mothers’ engagement patterns are becoming more egalitarian.

There is further evidence within the parenting literature that fathers and mothers not only show differences in time spent in positive engagement activities but also may interact differently with their children (Lewis & Lamb, 2003). For example, observational research has found that fathers tend to engage in more physical play, and mothers often demonstrate greater responsiveness to infant cues (Power, 1985; Power & Parke, 1983). Moreover, infants experience peaks of high positive arousal during playful interactions with fathers, whereas interactions with mothers are just as positive, but less intense (Feldman, 2003; Paquette, Carbonneau, Debeau, Bigras, & Tremblay, 2003). Perhaps due to these differences in interaction style, infants and toddlers appear to enjoy engagement with their fathers (Roggman, 2004). Thus, even if fathers spend less time than mothers engaging with their children, if the time they do spend in positive engagement is more salient to children, fathers’ engagement could be just as consequential as mothers’ for child development, and infants may gain different strengths from these interactions.

Parental Engagement and Positive Social-Emotional Development

Indeed, both fathers’ and mothers’ parenting has been linked to child development, with some researchers finding more significant associations for mothers (Rothbaum & Weisz, 1994), some finding fathers to be more influential (e.g., Cabrera et al., 2007), and others highlighting the impact that fathers have above and beyond the contributions of mothers (Sarkadi et al., 2008). Unfortunately, most research linking parenting and child adjustment has measured child social-emotional development as the lack of social-emotional problems (e.g., internalizing or externalizing; e.g., Amato & Rivera, 1999; Sarkadi et al., 2008) rather than the presence of social-emotional strengths (for exception, see Yarrow et al., 1984). However, young children’s social-emotional competencies, including the ability to regulate one’s emotions, a nascent understanding of others’ emotions, and the confidence and persistence to interact with the surrounding world, may be just as consequential for their development. These competencies act as assets that ward off future problem behaviors (Briggs-Gowan & Carter, 1998). Given that young children’s early social-emotional development may not be transient (Briggs-Gowan, Carter, Bosson-Heenan, Guyer, & Horwitz, 2006), understanding the parental engagement patterns that foster early social-emotional competence has important implications for supporting children’s long-term social-emotional adjustment.

There is an especially limited body of research investigating mothers' and fathers' time in positive engagement activities and young children's positive social-emotional adjustment. But, within the literature on observed parenting behavior, there is some evidence that fathers' interactions with their children are one important factor in the development of social-emotional skills. For example, Yarrow et al. (1984) found that fathers' sensory stimulation was related to specific aspects of mastery motivation, particularly problem-solving persistence in 6-month-old infants. In addition, Cabrera et al. (2007) demonstrated that fathers', not mothers', supportiveness was significantly associated with toddler emotional regulation at 24 months. However, in both studies, fathers' parenting was associated with concurrent, rather than future, social-emotional adjustment.

Scholars have argued that fathers' high-quality play provides children occasions to practice skills involved in peer relationships, increasing children's social competence (Lindsey, Mize, & Petit, 1997; Roggman, 2004), and research demonstrates that father involvement in play during the preschool period is associated with increased social competence in kindergarten when accompanied by supportive coparenting (Jia, Kotila, & Schoppe-Sullivan, 2012). In Paquette's (2004) work on father-child play, he found that fathers engage in physically arousing, boisterous play with their children, encouraging risks and pushing the boundaries of their physical, cognitive, and emotional limits, while at the same time providing a secure environment for their child, thereby fostering the child's ability to regulate emotions and behavior. Indeed, previous research has found that mutually responsive father-child play facilitates children's development of compliance and self-regulation (Kochanska, Aksan, Prisco & Adams, 2008), and high quality father-child play is associated with greater emotional regulation (Roggman, Boyce, Cook, Christiansen, & Jones, 2004).

Although parenting quality is an important dimension of parenting, quality has most often been assessed in brief observational assessments of parent-child, and most often mother-child, interactions (Lamb et al., 2002; for an exception, see McBride & Mills, 1993), which may or may not reflect the day-to-day patterning of fathers' and mothers' behavior. Hence, understanding the kinds of behaviors that both fathers and mothers engage in with their infants on a daily basis and the amount of time they invest in these behaviors may also be of importance for children's social-emotional development (Brown et al., 2012).

The Present Study

The current study examined trajectories of father and mother positive engagement over the first nine months of their child's life, and associations of these early engagement patterns with the child's later social-emotional competence. First, we used growth-curve analysis to compare the engagement trajectories of dual-earner fathers and mothers on workdays and nonworkdays. We considered parental engagement time separately for work- and non-workdays because previous research indicates that parents' time with children may differ for weekdays and weekends (Yeung, Sandberg, Davis-Kean, & Hofferth, 2001). Next, we tested the extent to which variability in the intercepts and slopes of parental engagement predicted child social-emotional competencies in toddlerhood. We focused specifically on toddlers' compliance, attention, empathy, and mastery motivation – key skills that lay the foundation for healthy social-emotional development (Carter & Briggs-Gowan, 2006).

We anticipated that fathers and mothers would each spend significant amounts of time in positive engagement activities, and that the time they spent in these activities would increase over the first 9 months of their child's life, as infant capacities and needs for interaction increased (Lamb et al., 2002). However, consistent with prior research (Craig, 2006; McBride & Mills, 1993), we expected that mothers would spend significantly greater time in positive engagement than fathers across the infant's first 9 months. With respect to toddler social-emotional competence, we hypothesized that mothers' and fathers' positive engagement would foster different competencies. In particular, we hypothesized that fathers' engagement would be positively associated with mastery motivation and compliance, since previous research has found that fathers may foster problem-solving persistence (Yarrow et al., 1984) and emotional regulation (Cabrera et al., 2007; Paquette, 2004), the latter of which is likely a key component in complying to parental requests. However, we anticipated that mothers' engagement would be associated with attention and empathy, since mothers show greater patterns of attention focusing behavior with infants (Yarrow et al., 1984) and greater sensitivity to infant cues (Lewis & Lamb, 2003; Power, 1985).

Method

Sample and Procedures

We used data from the New Parents Project, a longitudinal study of 182 sets of dual-earner, different-sex, first-time parents residing in a large, Midwestern city, and additional data collected about their toddlers' development from families who participated in a follow-up study. Expectant fathers and mothers were interviewed in the third trimester of pregnancy and again at 3, 6, and 9 months postpartum. Participants were primarily recruited through childbirth education classes, newspaper ads, flyers posted at doctors' offices and pregnancy and health centers. To be eligible for participation, parents must have been 1) either married or cohabiting, 2) at least 18 years of age, 3) expecting their first child, 4) the biological parents of the child, 5) able to read and speak English, and 6) employed prior to their child's birth and planning to return to paid employment shortly after the birth of the child. A follow-up to the New Parents Project was conducted when children were approximately 25 months old. At this time, mothers completed assessments regarding their children's social-emotional development, including the Infant Toddler Social Emotional Assessment (ITSEA; Carter & Briggs-Gowan, 2006). As outlined below, both fathers and mothers individually completed time diaries at all phases of the New Parents Project, and our sample includes couples in which at least one parent reported either a workday or a non-workday time diary at 3, 6, or 9 months postpartum, $n = 178$.

Sample characteristics were measured at the third-trimester assessment. Of the $n = 178$ couples, 86.52% were married. On average, mothers were 28.89 years of age, 84% self-identified as White, and 86% reported holding a bachelor's degree. Fathers were approximately 30.80 years old at the first assessment, 85% self-identified as White, 66% reported holding a bachelor's degree, and fathers reported an average household income of \$83,070 per year.

In the original study, fathers and mothers completed pen-and-paper time diaries for their most recent workday and non-workday at each assessment. Time diary collection closely

followed the format of the American Time Use Survey (ATUS; U.S. Bureau of Labor Statistics, 2006). Fathers and mothers independently reported all activities beginning at 4 A.M. on the target day and ending at 4 A.M. on the following day, including the location of the activity and if any additional activities were done at the same time. Trained interviewers reviewed diaries with participants to clarify inconsistent information and prompt recall of incomplete information. Interviewers used conversational interviewing techniques similar to those used in the ATUS, including probing in a non-leading way, redirection from erroneous information, and ensuring that activities reported actually occurred during the target day, rather than on a “usual” day (ATUS, 2012). Pen-and-paper data were entered into SPSS and research assistants categorized specific activities which were then quantified in order to determine the amount of time each parent spent in positive engagement (described in detail below).

In a follow-up study, mothers completed the ITSEA, an empirically-validated, clinical assessment tool designed to identify both competencies and areas of concern in toddlers’ (12 to 36 months) social-emotional development (Carter & Briggs-Gowan, 2006). This study focused on mothers’ Competence ratings, including the four subscales of Compliance, Attention, Mastery Motivation, and Empathy. Of the original New Parents Project sample ($N = 182$), 114 mothers, 63% of the original sample, completed the ITSEA questionnaire in the follow-up research.

Positive Engagement

Once pen-and-paper time diaries were reviewed with fathers and mothers individually, trained research assistants entered data into SPSS. Individual activities such as “tickling the baby” or “playing peek-a-boo” were categorized into broader activities such as “playing with the child.” The total number of minutes each parent reported spending time in the following categories were summed to create the positive engagement variables for fathers or mothers, respectively: reading, playing with the child, creating arts or crafts with the child, talking and listening to the child, and soothing or holding the child. Primary, secondary, and tertiary activities were included in the total time, but time was not double-counted. For example, fathers or mothers who reported two positive engagement activities at the same time did not receive double the time a parent who reported one positive engagement activity received. Time was calculated separately for the workday and non-workday.

Social-Emotional Competence

The Competence domain of the ITSEA assessment represents the child's age-appropriate social and emotional competencies, both key markers of risk for the development of behavior problems as well as points of strength for interventions (Carter & Briggs-Gowan, 2006). The ITSEA consists of six sub-scales representing developmentally appropriate competencies that, in contrast with problem behaviors, should increase over time. We used the following subscales: Compliance, Attention, Empathy, and Mastery Motivation. Internal consistency, i.e., Cronbach's alphas, for these subscales ranged from .53 to .86 in a national standardized sample (Carter & Briggs-Gowan, 2006).

All ITSEA items were rated on a scale of 0 to 2, with higher values indicative of greater competence. Of note, mothers were instructed to discern emotional competence from physical limitations. For example, if an emotionally competent child was unable to wave goodbye due to a physical limitation, a “No Opportunity” score was given. Items receiving a “No Opportunity” rating are eliminated from final score calculations.

Compliance—The 8-item Compliance subscale was used to capture the degree to which the child cooperates and listens to parents during day-to-day tasks. Items such as the child “puts toys away after playing,” and “stays while changed/dressed/bathed” marked the age-appropriate development of self-control and cognitive and linguistic skills to support compliance (Carter & Briggs-Gowan, 2006). The sample-specific Compliance subscale reliability was .73.

Attention—Age-appropriate attention regulation was measured using a 5-item scale with items such as the child, “plays with toys for 5+ minutes,” or “[pays] careful attention when taught something new.” The sample-specific Attention scale alpha was .67.

Empathy—This scale captures the degree to which children are attentive to the moods of others, such as becoming distressed or happy when these emotions are displayed in others, as well as motivation for reducing stress in others. The 7-item scale was constructed using items such as the child, “tries to help when someone is hurt,” and “jokes/gives things to make smile/laugh”. The sample-specific scale reliability was .88.

Mastery motivation—This 6-item scale measures the child's persistence despite challenges and pleasure following the accomplishment of tasks. Children high in mastery motivation are described as positively oriented and display a “can do” attitude (Carter & Briggs-Gowan, 2006). Mothers responded to items such as the child “keeps trying even when hard,” and “enjoys challenging activities”. The sample-specific scale alpha was .52.

Data Analysis

Latent growth models were employed to examine the trajectories of mothers’ and fathers’ positive engagement with infants between 3 and 9 months of age. Analyses were conducted using MPlus 7.0 (Muthén & Muthén, 1998-2012). In fitting the growth models, the full information maximum likelihood (FIML) algorithm was employed for missing data estimation. Among the 178 families included in this study, 16.3-33.1% fathers and 13.5-29.8% mothers had missing data on non-workday engagement, 20.8-34.3% fathers and 23.6-37.1% mothers on workday engagement, and 36.5% children on competence variables. Data were missing at random, as indicated by a nonsignificant Little's MCAR test, $\chi^2(555) = 600.87, p > .05$. We chose to estimate the missing data with the FIML method in MPlus, as this method has been shown to have clear advantages in reducing bias and increasing power over the traditional methods (e.g., listwise and pairwise deletion) with relatively large amounts (40-50%) of missing data (Acocck, 2005; Enders, 2013).

Results

Trajectories of Mothers' and Fathers' Engagement

Table 1 provides the means, standard deviations and correlations of and among, respectively, all parental engagement and competence variables. Figure 1 depicts the actual and predicted trajectories of fathers' and mothers' engagement on work and non-workdays from 3 to 9 months postpartum.

Models for parents' engagement during work and non-workdays were fitted separately. For each set of analyses, an unconditional model (i.e., a growth model without any predictors) was estimated initially to determine whether a linear model adequately fit the data. A conditional model was then estimated in which the intercept and the slope were regressed on parent gender to examine whether mothers' and fathers' trajectories differed.

Non-workdays—The unconditional model fit the data well, $\chi^2(1) = .212, p > .05$, CFI = 1.000, RMSEA = .000 (90% C.I. = .000-.110). On average, parents spent 4.32 hours engaging with their infants at 3 months, followed by positive linear growth over time (slope = .85, $p < .001$), with the rate of increase at about 51 minutes every 3 months. There was significant individual variability in intercepts ($\sigma^2 = 4.52, p = .004$) and slopes ($\sigma^2 = 1.85, p = .019$). The intercept and slope were unrelated. In the conditional model, parent gender (father = 1; mother = 0) was entered as a predictor of the intercept and slope of the trajectory of engagement. The model fit was good, $\chi^2(2) = 1.059, p > .05$, CFI = 1.000, RMSEA = .000 (90% C.I. = .000-.088). Trajectories of fathers and mothers only differed in the intercept ($B = -1.19, SE = .36, \beta = -.28, p = .001$); fathers' engagement was about 71 minutes less than mothers' at all three time points.

Workdays—The fit of the unconditional model was good, $\chi^2(2) = .026, p > .05$, CFI = 1.000, RMSEA = .000 (90% C.I. = .000-.075). The average time parents were engaged with their infants was about 2 hours at 3 months, followed by a linear growth of about 17 minutes every 3 months (slope = .28, $p < .001$). Again, there was significant individual variation around the intercept ($\sigma^2 = 1.74, p = .002$) and the slope ($\sigma^2 = .68, p = .011$). The model fit remained strong when parent gender was added into the model as a predictor, $\chi^2(2) = .987, p > .05$, CFI = 1.000, RMSEA = .000 (90% C.I. = .000-.088). Similar to results for non-workdays, fathers' engagement was consistently about 44 minutes less than that of mothers' ($B = -.74, SE = .21, \beta = -.29, p = .002$) on workdays; no differences were found between fathers' and mothers' slope.

Parental Engagement and Child Competence

Growth curve models were estimated using growth factors (i.e., intercept and slope) of parents' engagement with infants to predict infant compliance, attention, empathy, and mastery motivation. Competence in these four domains was analyzed in the same model, as they are moderately correlated with each other. Fathers' and mothers' trajectories on workdays and nonworkdays were analyzed in separate models. Figure 2 shows fathers' and mothers' engagement models for non-workdays. Mothers' and fathers' engagement on

workdays was not predictive of any child competence variables and will not be further discussed.

Model 1a predicted child competence using the growth factors of fathers' trajectory of engagement. The model fit the data adequately, $\chi^2(5) = 8.235, p > .05$, CFI = .977, RMSEA = .061 (90% C.I. = .000-.132). A greater rate of increase in fathers' engagement with infants predicted higher competence in attention regulation ($B = .08, SE = .05, \beta = .34, p = .04$) and mastery motivation ($B = .05, SE = .03, \beta = .31, p = .03$). Model 1b estimated the predictive association between growth factors of mothers' trajectory of engagement and child competence. The model fit the data very well, $\chi^2(5) = 3.559, p > .05$, CFI = 1.000, RMSEA = .000 (90% C.I. = .000-.087). Interestingly, it was the intercept of mothers' engagement trajectory that predicted children's later competence in attention regulation ($B = .06, SE = .04, \beta = .34, p = .003$) and mastery motivation ($B = .04, SE = .01, \beta = .37, p = .003$), such that the more time mothers spent in positive engagement the more competent their infants were.

Discussion

Consistent with previous research regarding parental involvement in childrearing and parental involvement time with infants (Craig, 2006), we found that mothers spent significantly more time than fathers in developmentally appropriate positive engagement on both work and non-workdays over the first 9 months of their child's life, and that both parents increased their engagement as their child developed. In addition, contrary to our hypotheses, both fathers' and mothers' engagement patterns positively predicted similar aspects of toddler social-emotional competence. However, it was mothers' initial levels of engagement (i.e., their intercept), but fathers' rate of increase over time (i.e., their slope), that was associated with greater child attention and mastery motivation.

There was no significant difference between the slope of fathers' and mothers' parental engagement. Although previous research has found that fathers increase their parental engagement throughout infancy (Gaertner, Spinrad, Eisenberg, & Greving, 2008), and indeed fathers within our sample increased their engagement over time, they were not, on average, doing so at a rate greater than that of mothers. This finding, coupled with mothers' initially higher level of parental engagement, provides evidence that in dual-earner couples with relatively high levels of education, in which parents likely hold strong beliefs about the need to be heavily engaged parents (Lareau, 2002), and more egalitarian beliefs regarding paternal and maternal family roles (Cunningham, Beutel, Barber, & Thornton, 2005), there is still a significant inequity with regards to time spent in positive engagement with infants. Hence, the gender revolution may be stalled within this aspect of family life. This inequity may have important implications for children, for as our findings revealed, when fathers increased their positive engagement over time, their children demonstrated higher levels of attention and mastery motivation. Perhaps there are other cultural or structural forces that are working to maintain this inequity in time investment, however our research lends some additional credibility to the theoretical assertions within the SDT perspective, demonstrating that fathers, on average, may be electing to spend their time elsewhere, reflective of the individualistic cultural values of present society.

For mothers what best predicted toddlers' greater attention, confidence and persistence was their initial level of engagement, but for fathers, it was their relative increases in positive engagement over time that forecasted greater child confidence, persistence, and attention. Fathers who increasingly provide more developmentally appropriate engagement during infancy may be demonstrating their selective investment, increasing their involvement in ways that will afford the biggest pay-off for their offspring (and therefore, themselves) over the long term (Bjorklund & Shackelford, 1999). Hence, this pattern could be indicative of the individualistic values of the SDT. Indeed, children's ability to attend and their mastery motivation are assets that can serve them well academically (Blair, 2002; Gottfried, Fleming, & Gottfried, 2001), and help them more quickly attain the knowledge and skills needed to be successful in their culture. However, because we do not know the motivations underlying these fathers' choices to increasingly engage with their infants, it may also be that these investments are driven by a cultural emphasis on intensive parenting (Wall & Arnold, 2007).

It is important to note that significant associations between parental engagement over infancy and toddler social-emotional competencies were only found on non-workdays. This finding provides some evidence that, for dual earner-families, what parents do on non-workdays, when their time is less constrained, is what matters most for children's social-emotional adjustment. It may be that interactions on non-workdays for parents in dual-earner families are somehow qualitatively different; perhaps parents are more sensitive and responsive to their children's needs when unconstrained by other commitments. It appears that at least some parents are capitalizing on their available time with children (Yeung et al., 2001), and that, in particular, their investment in developmentally appropriate engagement on these non-workdays helps to foster key social-emotional strengths that serve as assets as their children continue to grow (Briggs-Gowan et al., 2006; Carter & Briggs-Gowan, 2006).

It is intriguing that the fathers' and mothers' engagement patterns were associated with attention and mastery motivation, but not the other dimensions of social-emotional competence. Perhaps the investment of time is particularly important for scaffolding young children's attention and mastery motivation. Looking at the actual items used to assess toddler's mastery motivation and attention, the ability to focus on a task and persist in the face of challenge are, in fact, incumbent on the child's capacity to remain engaged in a task. Thus, perhaps for these dimensions of competence, fathers' and mothers' quantity of engagement, in addition to quality, is vital to demonstrate how to continuously work on an idea or how to continue when one encounters frustration. Indeed, the fact that time in positive engagement did not predict children's empathy or compliance may indicate that these are more strongly influenced by qualitative aspects of the relationship, e.g., sensitive, responsive parenting and discipline style.

Our findings must be interpreted in the context of our sample and methodology. First, the early parental engagement trajectories for dual-earner, different-sexed, first-time parents, and their associations with toddler social-emotional competence, may be different than in other families. However, our sample was representative of dual-earner couples from the geographic region in which we sampled, and arguably these families are an important population in which to examine and compare fathers' and mothers' engagement with their

children. Second, only mothers reported on children's social-emotional competencies. Although it would have been valuable to have fathers' perspectives on these assets, previous research has demonstrated reasonable interrater agreement between mothers and fathers (Carter, Briggs-Gowan, Jones, & Little, 2003). Third, because we only assessed children's social-emotional competence at one time point, we cannot truly ascertain the direction of the association; it may be that more skilled infants elicit greater positive engagement. Fourth, although our time diary methodology provided a detailed assessment of our sample's self-reported parental engagement at 3, 6 and 9 months, and previous research has found that time diaries capture a more accurate assessment of time use than other methodologies (Juster & Stafford, 1991), the amount of time parents reported spending in developmentally appropriate engagement does not provide information about the quality of the parent-child interactions during such activities. However, it does provide a more realistic picture of day-to-day parenting patterns than brief behavioral observations. Future research would be best served by including detailed measures of both quantity and quality of parental engagement over time. Lastly, an additional strength of our study is that it was one of the few that has focused on the development of social-emotional strengths in infancy and how fathers' and mothers' engagement patterns may foster particular competencies (Yarlow, 1984).

During early infancy, a period of rapid developmental change (Lamb et al., 2002), both fathers and mothers in dual-earner families are increasing the amount of time they invest in positive engagement activities with their children, and the greater both parents' engagement, the stronger the child's social-emotional competencies in toddlerhood. Many of these parents are making significant investments in their young children, and they appear to be "paying off". However, the rates of increase in positive engagement were similar for fathers and mothers, despite the fact that fathers' levels of engagement were initially lower than mothers', suggesting that the norms of "intensive mothering" and "involved fathering" (Hays, 1997) may be thwarting the realization of the second half of the gender revolution in this population, adding another layer of complexity to understanding the implications of the SDT for child and family well-being. In order to understand if these parental, and in particular, paternal, positive engagement patterns are more reflective of the individualistic ideology of the SDT, or more indicative of structural or cultural forces that may be sustaining inequality in childrearing, future research should focus on the motivational forces behind fathers' and mothers' engagement patterns.

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Figure 1.
Trajectories of mothers' and fathers' positive engagement with infants

(a) Growth in fathers' engagement and child competence

(b) Growth in mothers' engagement and child competence

Figure 2.

Growth curve models of parents' trajectories of engagement and child competence. * $p < .05$.

** $p < .01$; solid lines depict significant paths and dotted lines depict nonsignificant paths.

Table 1

Correlations and Descriptive Statistics of Parental Engagement and Social-Emotional Competence Measures

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. M3. Work	1															
2. M6. Work	0.33*	1														
3. M9. Work	0.12	0.50*	1													
4. M3. NW	0.21*	0.14	0.03	1												
5. M6. NW	0.24*	0.12	0.04	0.37*	1											
6. M9. NW	0.11	0.10	0.25*	0.24*	0.41*	1										
7. F3. Work	0.17	0.34*	-0.05	0.19*	0.29*	0.06	1									
8. F6. Work	0.03	-0.15	0.03	0.03	0.12	0.16	0.15	1								
9. F9. Work	0.28*	0.15	0.21*	0.03	0.12	-0.00	0.12	0.14	1							
10. F3. NW	0.18	0.27*	0.24*	0.12	0.02	0.04	0.24*	0.08	0.26*	1						
11. F6. NW	0.13	0.16	0.14	0.04	0.40*	0.06	0.22*	0.28*	0.14	0.25*	1					
12. F9. NW	0.13	0.02	-0.01	0.19*	0.14	0.22*	0.16*	0.27*	0.14	0.19*	0.42*	1				
13. Comp.	-0.10	0.17	-0.09	0.14	0.17	0.11	0.14	0.21*	-0.09	-0.14	0.15	0.19*	1			
14. Attent.	-0.06	0.12	-0.02	0.18	0.27*	0.18	-0.02	0.17	-0.14	-0.15	0.17	0.16	0.73*	1		
15. Mast.	-0.06	0.10	-0.03	0.13	0.36*	0.19*	0.04	0.14	-0.06	-0.06	0.17	0.20*	0.48*	0.35*	1	
16. Emp.	-0.03	0.17	-0.05	0.07	0.14	0.14	0.16	0.13	-0.04	-0.12	0.17	0.13	0.85*	0.53*	0.32*	1
<i>M</i>	137.57	159.90	170.56	295.04	349.32	413.53	96.50	109.03	132.75	216.82	273.18	307.48	1.46	1.56	1.72	1.22
<i>SD</i>	124.79	127.36	142.99	203.98	187.04	223.70	92.38	107.10	109.14	191.02	235.98	221.27	0.28	0.36	0.23	0.54
<i>n</i>	132	112	136	154	125	154	141	117	139	147	119	149	113	113	113	113
Range	0-680	0-626	0-740	0-1030	0-1140	0-1092	0-430	0-480	0-570	0-940	0-1380	0-970	.78-2	.4-2	.83-2	0-2

Note. M = Mother, F = Father; 3 = 3 Months, 6 = 6 Months, 9 = 9 Months; Work = Workday, NW = Non-workday. Comp. = Compliance. Attent. = Attention. Mast. = Mastery Motivation. Emp. = Empathy.

* Denotes significant correlations. $p < 0.05$.