CHINESE CHILDREN’S RELATIONSHIPS WITH MOTHERS DURING THE TRANSITION TO NURSERY CARE: CHANGES AND ASSOCIATIONS WITH LATER GROWTH IN SOCIAL COMPETENCE

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ABSTRACT: Based on a longitudinal sample of 115 Chinese children, the present study examined changes in mother–child relationships (closeness and conflict) during the transition to nursery care and how these relationships were associated with later growth in children’s social competence. The results did not indicate significant changes in mother–child relationships at the mean level but revealed significant individual variations in such changes. These variations were associated negatively with mother–child relationships at 3 months after nursery entry. Social competence showed positive linear growth across the nursery and junior kindergarten years, and significant individual variations in such growth. Initial conflict in mother–child relationships at 3 months after nursery entry positively predicted later growth in social competence. In contrast, initial social competence did not significantly predict changes over time in mother–child relationships. Findings are discussed in terms of how to help children navigate the transition to nursery care and develop their social competence.

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With a full-scale move toward a market economy since the early 1980s, the People’s Republic of China (China) has been facing a dramatic increase in maternal labor force participation. As a result, many urban Chinese families have begun to seek non-parental care for their young children. Transition to childcare marks a qualitative change in context with accompanying physical, cognitive, and social challenges. To successfully navigate the transition, young children must be socialized with new roles, expectations, and standards that characterize the demands of the childcare setting. Of increasing interest to parents and researchers are the ways in which parents shape children’s social adjustment during this transition. Using a sample of Chinese children who were navigating the transition to out-of-home care, the present study assesses changes in mother–child relationships and children’s social competence. Moreover, we further assess bidirectional longitudinal relations between mother–child relationships and social competence.

In particular, we assess whether relationships with mothers predict changes over time in social competence and whether social competence predicts changes over time in mother–child relationships.

NONPARENTAL CARE AND CHANGES IN MOTHER–CHILD RELATIONSHIPS

Mother–child relationships often change in the face of stressful life events (Thompson, 1998). Transition to nonparental care is inherently stressful, as young children are exposed to unfamiliar adults and/or unknown peers and new physical settings for extended periods of time in absence of their parents. Early studies have provided evidence of increased risk of insecure attachment for children who began full-time care early in life (e.g., Belsky & Rovine, 1988). Recent research has produced variable findings. A study of Israeli infants found that center-based care, instead of other types of care (e.g., home-based care), was most likely to increase rates of attachment insecurity (Sagi, Koren-Karie, Gini, Ziv, & Joels, 2002). In contrast, a large-scale study conducted in the United States has suggested that children exposed to large amounts of care are at increased risk for insecure attachment only if their mothers are highly insensitive (NICHD Early Child Care Research Network, 1997, 2001). In his recent review, Belsky (2009) noted that the effects of nonparental care on attachment security might be contingent on the societal context where daycare was experienced. He also called for more research from different nations. To our
knowledge, however, no studies have examined changes in attachment in relation to nonparental care in Chinese societies.

The organization of early care and education in China rarely involves out-of-home care for infants and toddlers, who usually receive care from their parents, relatives (e.g., grandparents), and/or babysitters in their own homes. For children aged 2 years and older, there are three main types of early childhood programs: nurseries (for 2-year-olds), kindergartens (junior, middle, and senior kindergartens for 3-, 4-, and 5-year-olds, respectively), and pre-primary programs (for 6-year-olds). In urban areas (e.g., Beijing), nurseries and kindergartens are usually combined into preschools that provide full-day care/education for children aged 2 to 5 years. The present study focuses on a group of young children who were navigating the transition to nursery care.

During the toddler and preschool years, children are able to assert their own will, and parents begin to assert control over their behavior (Laible & Thompson, 2002). Conflict is thus considered a large part of parent–child relationships during these years (Cicchetti, Cummings, Greenberg, & Marvin, 1990). However, the Attachment Q-Set (Waters & Deane, 1985), which represents the most prevalent attachment assessment tool for children aged 2 to 5 years, provides only security and dependency scores, but no score for conflict. Consequently, the attachment literature has rarely paid attention to conflict except for security and dependency in attachment during early childhood (Cicchetti et al., 1990). Although the common perception is that secure attachment involves less conflict, recent studies have suggested the need to systematically differentiate conflict from security/closeness in parent–child relationships across the toddler and preschool years (e.g., Klimes-Dougan & Kopp, 1999; Laible, Panfile, & Makariev, 2008). For example, mother–child conflict was found to correlate at low to moderate levels with security/closeness in mother–child relationships (Laible et al., 2008; Zhang & Chen, 2010). Moreover, conflict and closeness in mother–child relationships were found to contribute independently to the prediction of children’s behavioral and emotional adjustment (Zhang, Chen, Zhang, Zhou, & Wu, 2008). These findings have suggested that mother–child closeness and conflict may not be simply two points on one continuum. Thus, the first objective of this study is to examine changes in both closeness and conflict in mother–child relationships during Chinese children’s transition to nursery care.

To fulfill this objective, we ask three specific research questions. First, are there significant changes in mother–child relationships during Chinese children’s nursery years? Nonparental care that was linked to insecure attachment occurred primarily in children’s first years of life (Belsky & Rovine, 1988; Sagi et al., 2002), but not in their second to fifth years (Belsky & Steinberg, 1978). Because our participants began visiting nurseries in their third years of life, we do not anticipate significant changes in their mother–child relationships [Hypothesis 1a (H1a)]. Second, are there significant individual differences in changes over time in mother–child relationships? Although attachment relationships may not change at the mean level, research has suggested that children differ in their changes over time in attachment security during the transition to nonparental care. For example, a recent study conducted in Germany showed that 41% of secure infants shifted to insecure while 40% of insecure infants shifted to secure following childcare entry (Ahnert, Gunnar, Lamb, & Barthel, 2004). We thus expect that our participants also would show significant individual variability in their changes over time in mother–child relationships during their nursery years [Hypothesis 1b (H1b)]. Third, how are the individual differences in changes in mother–child relationships associated with variations in initial status in the relationships following nursery entry? This question has rarely received empirical attention; however, a recent study has reported that mothers felt confused and helpless when witnessing their children expressing distress (e.g., crying) during the period of initial adjustment to daycare, suggesting that negativity in mother–child relationships might peak during the initial transition (Klein, Kraft, & Shohet, 2010). Another study has found that children who fussed and cried more during the initial transition showed steeper decline over time in fussing and crying than did their peers who fussed and cried less (Ahnert et al., 2004). We thus anticipate that mother–child relationships during the initial transition would be associated negatively with changes over time in these relationships [Hypothesis 1c (H1c)].

Note that mother–child closeness was measured in this study using items based on the attachment theory and the Attachment Q-Set (discussed later). We thus consider this construct to be similar to attachment security (see also Bergin & Bergin, 2009). More important, because the literature linking nonparental care with changes in mother–child relationships has relied predominantly on the attachment theory, we add conflict to the examination of mother–child relationships, with the expectation of extending the literature.

### CHANGES IN SOCIAL COMPETENCE DURING EARLY CHILDHOOD

Although institution-based care may provoke strains and stresses of group life separate from parents, it also may facilitate children’s development of cognitive and social competence. Research has documented that spending time in nonparental care increases children’s social knowledge and skills (e.g., NICHD Early Child Care Research Network, 2003). Indeed, positive growth in social competence is typical during early childhood, regardless of whether children have daycare experience (Lengua, Honorado, & Bush, 2007). This study does not intend to compare children with and without nonparental care experience; instead, our second objective is to assess changes in Chinese children’s social competence following entry into nurseries.

To fulfill this research objective, we ask three questions. First, how does social competence change following nursery entry? An increasing body of research has documented that social competence increases linearly during early childhood (Lengua et al., 2007; Raikes, Robinson, Bradley, Ruijkes, & Ayoub, 2007). We thus hypothesize linear growth in social competence among Chinese children during a 2-year period following nursery entry [Hypothesis 2a (H2a)]. Second, is there significant individual variability in rates of growth in social competence among Chinese children?
Recent research has suggested that children differ in their rates of growth in social competence during early childhood. For example, Moilanen, Shaw, Dishion, Gardner, and Wilson (2010) found that self-regulatory abilities showed significant individual differences in rates of growth from ages 2 to 4 years. We thus expect that Chinese children also would show significant individual differences in their rates of growth in social competence [Hypothesis 2b (H2b)]. Third, how are the individual differences in rates of growth in social competence associated with variations in initial status in competence? Because more emotional distress during the initial transition to daycare was associated with steeper decline over time in distress (Ahnert et al., 2004), we anticipate that weak social competence during the initial transition would be associated with steeper growth in competence [Hypothesis 2c (H2c)].

**LINKS BETWEEN MOTHER–CHILD RELATIONSHIPS AND SOCIAL COMPETENCE**

While a huge body of research has accumulated linking nonparental care with changes in attachment and growth in children’s cognitive and social skills, less attention has been paid to how relationships with mothers function during the transition to childcare and, in turn, contribute to later developmental outcomes. Evidence has suggested that the presence of mothers buffers secure children’s elevated negative responses to extremely brief separations lasting only a few minutes (Spangler & Grossmann, 1993). It also has been found that secure children more effectively modulate stress reactions to brief separations than do insecure children (Siegel, 2001). However, less is known whether secure attachment helps buffer children from stress and shape their regulatory capacities during prolonged separations. Only one study was located that linked behavioral responses to childcare entry with mother–child attachment, in which Ahnert et al. (2004) found that secure children fussed and cried more than did insecure children. It thus seems that the operation of attachment during prolonged separations might be different from that during brief separations. Given that Ahnert et al.’s study focused solely on children’s socioemotional adjustment during the initial transition to daycare (i.e., the first 5 months following daycare entry), it remains to be seen how children’s long-term socioemotional outcomes are related with mother–child relationships manifested during the initial transition. Consequently, the third objective of this study is to investigate how relationships with mothers during the initial transition to daycare contribute to children’s later development of social competence over a 2-year follow-up period.

To fulfill this objective, we ask three questions. First, how is mother–child closeness related to children’s social competence during the period of initial adjustment to nurseries? Because Ahnert et al. (2004) found more fussing and crying behavior in secure than in insecure children upon daycare entry, we expect that secure (close) relationships would be associated with weaker social competence than would insecure relationships during the initial transition [Hypothesis 3a (H3a)]. Second, how is mother–child closeness related to growth over time in social competence? Because secure children’s negative behaviors declined more rapidly over time than did those in insecure children during the first 5 months following daycare entry (Ahnert et al., 2004), we expect that secure (close) relationships would be associated with steeper growth in competence than would insecure relationships [Hypothesis 3b (H3b)]. Third, how does mother–child conflict contribute to rates of growth in social competence? The evidence available linking conflict in parent–child relationships with childhood outcomes has been mixed (for a review, see Laursen & Hafen, 2009). On one hand, a list of studies has linked conflict to behavior problems, school difficulties, and peer rejection (Waschbusch, 2002). On the other hand, both theoretical and empirical work also has identified many benefits from parent–child conflict, especially during early childhood (Herrera & Dunn, 1997; Laible et al., 2008).

The fourth objective of the present study is to assess whether social competence would predict changes over time in mother–child relationships. Transactional models of parent–child interactions posit bidirectional effects between parents and children (Bell, 1968; Patterson, Reid, & Dishion, 1992; Samaroff, 1975). Such models argue for reciprocal influences in which children are affected by parents’ behaviors (i.e., parent-driven effect) and elicit particular reactions from parents as well (i.e., child-driven effects). Transactional models have been applied to examine mutual effects between mother–child relationships and children’s social behaviors (e.g., Buist, Dekovic, Meeus, & van Aken, 2004). Descriptive research conducted during the transition to daycare also has documented that mothers demonstrate daily changes in their behavioral responses to their child’s expressions of discomfort from the early separations during the first few weeks in daycare to later separations (Klein et al., 2010). We therefore expect that social competence during the initial transition to nurseries would predict changes in mother–child relationships [Hypothesis 4 (H4)].
In summary, the present study explores changes in mother–child relationships and growth in social competence among Chinese children who were navigating the transition to nursery care. Furthermore, we assess whether children’s rates of growth in social competence would be predicted by closeness and conflict in mother–child relationships and whether changes in mother–child relationships would be predicted by social competence. Considering that family processes may show similarities as well as differences across the child’s gender, we further test gender invariance in the observed effects to assess whether gender moderates the associations between mother–child relationships and social competence. Moreover, we examine whether five potential candidates for “common causes” implicated in previous research can account for any observed effects. To this end, we add the child’s gender, age, temperament, and maternal and paternal education to the final model, with the expectation that any observed effect would prove robust with inclusion of these control variables.

**METHOD**

**Participants**

Children were recruited from six nursery classes at three urban preschools (two public and one private) in Beijing, China and were identified with parental consent as they entered nurseries. Families and schools were not compensated for their participation. At 3 months after the children’s nursery entry (Time 1 (T1)), 115 children (53 boys, 62 girls; M = 33.32 months old, SD = 3.06 months) participated with their mothers (for an overview of the research design, see Figure 1). All children were of Chinese origin. Most children (92.2%) were ethnic Han Chinese, and the remaining 7.8% were ethnic Man, Hui, or Mongolian Chinese. Most children (94.8%) were only children, and the others had one sibling. The mean age of mothers was 31.41 years (SD = 3.12 years), the mean age of fathers was 33.68 years (SD = 3.47 years), and the mean per-capita monthly income was $304 (SD = $219). Most parents (97.4%) were living together, and 2.6% were separated and living alone or divorced; 76.3% of mothers and 80.5% of fathers held a vocational college degree or higher. The sample represented a relatively privileged urban community in China.

At 9 months after T1 [Time 2 (T2); i.e., at the end of the nursery year], 11 children had transferred to other nurseries and no longer participated, and one child’s mother had been on a business trip; the remaining 103 children participated with their mothers. At 1 year after T2 [Time 3 (T3); i.e., at the end of junior kindergarten], 19 children had transferred to other preschools and no longer participated, and one child’s parents had divorced and the child lived with his father; the remaining 83 children participated with their mothers. At T2 and T3, attrition analyses did not reveal significant differences in social competence, mother–child relationships, or any of the control variables at T1.

**Measures**

Both measures used to assess social competence and mother–child relationships in the present study were initially developed in the United States. We translated them and then asked an independent translator to back-translate them. Discrepancies between translation and back-translation were resolved through discussion. Using a variety of formal and informal strategies (e.g., interviews with parents, repeated discussion in the research group, psychometric analyses), three members of our research team carefully examined the items in the measures to ensure cultural appropriateness. All items in the measures were adopted, but the wordings that were not appropriate for use in China were adapted.

**Mother–child relationships** At T1 and T2, mothers rated their own relationships with their children during the last 3 months using the Child–Parent Relationship Scale (CPRS; Pianta, 1992). The CPRS is a 26-item self-report instrument rated on a scale ranging from 1 (definitely does not apply) to 5 (definitely applies) to assess a parent’s perception of his or her relationship with a target child. The items on the scale were based on the attachment theory, the Attachment Q-Set, and observations of parent–child interactions (Pianta, 1992). The CPRS contains three subscales: Closeness (10 items), Conflict (12 items), and Dependence (four items). It has been used with children 2 to 5 years of age (Pianta, 1992). Previous research has reported that the reliability of the Dependence scale was low (Pianta, 1992); thus, for the present study, the Closeness and Conflict scales were used. Closeness measures a parent’s feelings of
affection and open communication with his or her child (e.g., “I share an affectionate, warm relationship with my child.”), and conflict measures a parent’s perception of negativity and conflict with the child (e.g., “My child and I always seem to be struggling with each other.”). Higher scores on the Closeness scale indicate a close relationship between mother and child during the last 3 months whereas higher scores on the Conflict scale indicate a conflictual relationship. Cronbach’s α coefficients were 0.70 and 0.71 in the Closeness scale and 0.76 and 0.71 in the Conflict scale at T1 and T2, respectively.

Social competence. At each of the three time points, mothers rated their children’s social competence during the last 3 months with the Social Competence subscale of the Early School Behavior Rating Scale (ESBRS; Caldwell & Pianta, 1991). This subscale has 16 items that are rated on a 4-point scale to assess a parent’s perception of his or her child’s social competence. Mothers were asked to rate how each behavior listed in the scale (i.e., “Plays well with other children”) that described their child(ren) during the last 3 months (1 = hardly ever, 2 = sometimes, 3 = much of the time, 4 = almost always). The α coefficients were 0.75, 0.78, and 0.79 at T1, T2, and T3, respectively. Higher scale scores indicate stronger social competence.

Control variables. At T1, mothers reported five control variables, including the child’s gender, age, temperamental approach/withdrawal, and maternal and paternal education (Family income was not used as a control because it contained too many missing values.) The first four control variables were measured using a demographic questionnaire. Maternal and paternal education was coded as follows: 5 = master’s degree or above, 4 = bachelor’s degree, 3 = vocational college degree, 2 = high school or vocational-school degree, and 1 = secondary school or below. Temperamental approach/withdrawal (eight items, α = .67) were assessed using the Chinese version of Thomas and Chess’s (1977) Child Temperament Questionnaire. We focused on approach/withdrawal because it has been linked to mother–child relationships (Sanson, Hemphill, & Smart, 2004). Moreover, approach/withdrawal has been found to be particularly relevant to children’s social adaptation during the transition to nonparental care (Ahnert et al., 2004). High scale scores indicate approach behaviors.

Procedure

Data were collected in November 2004 (T1), August 2005 (T2), and August 2006 (T3). At each time point, families were contacted by mail delivered by the children’s teachers and asked if they would be willing to participate in a study of child development. After agreeing to participate, mothers were asked to fill out a packet of questionnaires and a consent form, and then return the completed questionnaires to the children’s teachers. Data collections at each time point were completed within 1 month. The Institutional Review Board of the first author’s university approved the recruitment and data-collection procedures.

Data Analytical Strategies

Analyses proceeded in three phases using latent growth curve modeling (LGCM). First, we conducted unconditional LGCM to separately estimate changes in mother–child relationships and growth in social competence and to examine whether initial status in each construct was significantly related to its changes. Second, we conducted conditional LGCM to examine the reciprocal effects between mother–child relationships and social competence. Specifically, we evaluated whether initial status in mother–child closeness and conflict was predictive of changes in social competence (i.e., mother-driven effects) and whether initial status in competence was predictive of changes in mother–child relationships (i.e., child-driven effects). Third, follow-up analyses were conducted to examine the robustness of the observed effects. To assess gender invariance, we applied a multigroup LGCM approach in the final model. We tested and compared the following two models: (a) an unconstrained model with all path coefficients allowed to be unequal across gender and (b) a constrained model with all path coefficients constrained to be equal across gender. Comparable fit between the constrained and unconstrained models indicates gender invariance whereas a significant difference in fit between the two models indicates significant gender differences in the final model. Moreover, we also tested whether significant paths in the final model remained after accounting for the shared influences of the child’s gender, age, maternal and paternal education, and approach/withdrawal. Statistically, this was accomplished by including these controls as a set of correlated variables in the final model that influenced each component of a significant path (for details of this procedure, see Masten et al., 2005).

All analyses were conducted using Mplus 6 (Muthén & Muthén, 1998–2010). Missing data were handled using maximum likelihood estimation with robust standard errors (MLR) to minimize the effects of any nonnormality on the test statistics. To evaluate the model fit, we used chi-square statistics, comparative fit index (CFI), Tucker–Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean residual (SRMR). A nonsignificant chi-square indicates good model–data fit. The general cutoffs for accepting a model were equal to or greater than 0.90 for CFI and TLI and equal to or less than 0.08 for the RMSEA and the SRMR (Hu & Bentler, 1999). Because we used MLR, Satorra–Bentler-scaled chi-square difference tests were conducted when comparing nested models (Satorra & Bentler, 2001). A significant chi-square change indicates a significant difference in fit between two compared models.

RESULTS

Preliminary Analyses

Table 1 presents the means and standard deviations of and the Pearson correlations between all variables at each time point. Correlations between social competence and mother–child closeness and conflict were significant and at low to moderate levels.
The intercept and slope terms of conflict also were negatively correlated, \( r = -.520, \ p < .001 \), suggesting that the more conflictual relationship a mother had with her child during the initial transition, the steeper the decline in conflict from T1 to T2 (i.e., the lower the slope). These results showed support for H1c (i.e., negative associations between initial status and changes over time in mother–child relationships). In addition, initial status in mother–child closeness was negatively related with that in mother–child conflict, \( r = -.216, \ p = .021 \). However, changes in closeness were not significantly related to either initial status, \( r = -.059, \text{n.s.} \), or changes, \( r = -.122, \text{n.s.} \), in conflict. Changes in conflict also were not significantly related with initial status in closeness, \( r = .034, \text{n.s.} \).

We also examined whether initial status and changes in mother–child relationships were the same for girls and boys. The results suggested that gender did not have a significant main effect on either intercepts or slopes in mother–child closeness or conflict, suggesting that both initial status and changes in mother–child relationships did not differ across the child’s gender.

### Estimating Growth in Social Competence

The second objective of the study was to examine whether there was positive growth in social competence from T1 to T3 and whether the growth was significantly related to initial status in competence. To this end, we estimated an unconditional linear change model (see Figure 2b) for competence scores from T1 to T3. As Figure 2b shows, the model included two components—the level ( Intercept; L-Competence) and the change (Slope; S-Competence) of competence—and their unconditional relation. Because there were 9 months between T1 and T2 and 21 months between T1 and T3, T1, T2, and T3 were coded as 0, 0.9, and 2.1, respectively.

The results further showed that the intercept and slope terms of closeness were negatively correlated, \( r = -.481, \ p < .001 \), indicating that the lower mother–child closeness during the initial 3-month transition, the steeper the growth in closeness from T1 to T2 (i.e., the higher the slope). The intercept and slope terms of conflict also were negatively correlated, \( r = -.520, \ p < .001 \), suggesting that the more conflictual relationship a mother had with her child during the initial transition, the steeper the decline in conflict from T1 to T2 (i.e., the lower the slope). These results showed support for H1c (i.e., negative associations between initial status and changes over time in mother–child relationships). In addition, initial status in mother–child closeness was negatively related with that in mother–child conflict, \( r = -.216, \ p = .021 \). However, changes in closeness were not significantly related to either initial status, \( r = -.059, \text{n.s.} \), or changes, \( r = -.122, \text{n.s.} \), in conflict. Changes in conflict also were not significantly related with initial status in closeness, \( r = .034, \text{n.s.} \).

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### Estimating Changes in Mother–Child Relationships

To examine changes in mother–child relationships during children’s nursery years and how the changes were related to initial status in the relationships (Objective 1), a parallel unconditional linear change model (see Figure 2a) was estimated for the relational measures at T1 and T2. As Figure 2a shows, the saturated model included four components [the Level (Intercept; L-Closeness) and the Change (Slope; S-Closeness) of mother–child closeness, and the Level (Intercept; L-Conflict) and the Change (Slope; S-Conflict) of mother–child conflict] and their unconditional relations. Because there were 9 months between T1 and T2, T1 was coded as 0, and T2 was coded as 0.9 (The code of 0.9, instead of 9, was used to avoid large time codes; Muthén & Muthén, 1998–2010.) With this coding, the L-Competence and L-Conflict were the latent means of closeness and conflict, respectively, at T1.

The results at the mean level showed that both closeness and conflict in mother–child relationships did not change significantly from T1 to T2, closeness: slope = .536, n.s.; conflict: slope = -.715, n.s., thereby providing no support to reject H1a (i.e., no significant changes in mother–child relationships at the mean level). There was significant individual variability in intercepts and in slopes in both closeness, intercept: \( \alpha_i^2 = 18.111, \ p < .001 \); slope: \( \alpha_i^2 = 19.042, \ p < .001 \), and conflict, intercept: \( \alpha_i^2 = 45.452, \ p < .001 \); slope: \( \alpha_i^2 = 54.629, \ p < .001 \), suggesting that children differed in their initial levels and in their changes over time in mother–child relationships. Hence, H1b (i.e., significant individual differences in changes over time in mother–child relationships) was supported. The results further showed that the intercept and slope terms of closeness were negatively correlated, \( r = -.481, \ p < .001 \), indicating that the lower mother–child closeness during the initial 3-month transition, the steeper the growth in closeness from T1 to T2 (i.e., the higher the slope). The intercept and slope terms of conflict also were negatively correlated, \( r = -.520, \ p < .001 \), suggesting that the more conflictual relationship a mother had with her child during the initial transition, the steeper the decline in conflict from T1 to T2 (i.e., the lower the slope). These results showed support for H1c (i.e., negative associations between initial status and changes over time in mother–child relationships). In addition, initial status in mother–child closeness was negatively related with that in mother–child conflict, \( r = -.216, \ p = .021 \). However, changes in closeness were not significantly related to either initial status, \( r = -.059, \text{n.s.} \), or changes, \( r = -.122, \text{n.s.} \), in conflict. Changes in conflict also were not significantly related with initial status in closeness, \( r = .034, \text{n.s.} \).

### Table 1. Descriptive Statistics of and Pearson Correlations Between the Variables

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<th>Variables</th>
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<td>2. Age</td>
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<td>3. Maternal education</td>
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<td>4. Paternal education</td>
<td>3.54 (1.04)</td>
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<td>5. Approach/withdrawal</td>
<td>23.43 (3.09)</td>
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<td>6. MCR closeness</td>
<td>41.18 (4.27)</td>
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<td>7. MCR conflict</td>
<td>27.31 (6.77)</td>
<td>-.07</td>
<td>.09</td>
<td>-.14</td>
<td>-.05</td>
<td>.12</td>
<td>-.22*</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8. Social competence</td>
<td>40.66 (5.92)</td>
<td>-.25**</td>
<td>-.09</td>
<td>.24*</td>
<td>.10</td>
<td>.11</td>
<td>.48***</td>
<td>-.36***</td>
<td></td>
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<tr>
<td>Time 2</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>9. MCR closeness</td>
<td>41.67 (4.22)</td>
<td>.00</td>
<td>-.08</td>
<td>-.01</td>
<td>-.03</td>
<td>.22*</td>
<td>.57***</td>
<td>-.28**</td>
<td>.38***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. MCR conflict</td>
<td>26.49 (6.60)</td>
<td>-.07</td>
<td>.05</td>
<td>-.06</td>
<td>-.06</td>
<td>.09</td>
<td>-.19</td>
<td>.50***</td>
<td>-.28**</td>
<td>-.37***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Social competence</td>
<td>41.14 (5.43)</td>
<td>-.29**</td>
<td>-.02</td>
<td>.06</td>
<td>-.02</td>
<td>-.05</td>
<td>.40***</td>
<td>-.33***</td>
<td>.56***</td>
<td>.51***</td>
<td>-.40***</td>
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<tr>
<td>Time 3</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>12. Social competence</td>
<td>43.34 (5.87)</td>
<td>-.30**</td>
<td>-.10</td>
<td>.15</td>
<td>.02</td>
<td>-.04</td>
<td>.41***</td>
<td>-.22*</td>
<td>.52***</td>
<td>.46***</td>
<td>-.32**</td>
<td>.62***</td>
<td></td>
</tr>
</tbody>
</table>

Note. MCR = mother–child relationship.
*effect coded: 1 = boys, -1 = girls.
*p < .05. **p < .01. ***p < .001.
The results suggested that the linear model provided an acceptable fit to the data, $\chi^2(1, N = 115) = 1.804$, $p = .179$, CFI = .987, TLI = .961, RMSEA (90% CI) = .072 (.000–.279), SRMR = .022. On average, initial status in social competence was relatively low, intercept = 40.406, $p < .001$. This was followed by gradual and positive linear growth from T1 to T3, slope = 1.396, $p < .001$, thereby lending support to H2a (i.e., linear growth in social competence). There was significant individual variability in relatively low, intercept = SRMR ($a$); the tested model for the evaluation of changes in social competence ($b$). The tested model for the evaluation of changes in mother–child relationships ($c$). The model $M_1$ included six latent components—the level (Intercept; L-Competence) and the change (Slope; S-Competence) of competence, the level (Intercept; L-Closeness) and the change (Slope; S-Closeness) of closeness, and the level (Intercept; L-Conflict) and the change (Slope; S-Conflict) of conflict—and the paths between competence and relational components. T1, T2, and T3 were coded 0, 0.9, and 2.1, respectively. Table 2 presents the estimated unconditional correlations between the latent components. Evaluation of $M_1$ indicated a very good fit to the data, $\chi^2(8, N = 115) = 7.738$, $p = .460$, CFI = 1.000, TLI = 1.004, RMSEA (90% CI) = .000 (.000–.107), SRMR = .030.

Following Bentler and Mooijaart’s (1989) suggestion, we next trimmed $M_1$ and looked at the specific effects. Figure 4 presents the trimmed model ($M_2$) with a completely standardized solution. Evaluation of $M_2$ indicated a very good model–data fit, $\chi^2(11, N = 115) = 9.291$, $p = .595$, CFI = 1.017, RMSEA (90% CI) = .000 (.000–.086), SRMR = .052. The chi-square difference between $M_2$ and $M_1$ was not significant, $\delta$ Satorra–Bentler-scaled $\chi^2(3) = 1.211$, n.s., indicating that the overall fit of the two models was comparable and that the trimming was allowed (Kline, 2005). $M_2$ was therefore chosen as our final model.

As Figure 4 shows, the path from initial status in mother–child conflict to growth in social competence was positive and statistically significant, $\beta = .402$, $p = .038$. Compared with mothers who

**TABLE 2. Estimated Correlations Between the Latent Components**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L-Conflict</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2. S-Conflict</td>
<td>−.53</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>3. L-Closeness</td>
<td>−.22</td>
<td>.03</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>4. S-Closeness</td>
<td>−.05</td>
<td>−.13</td>
<td>−.48</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>5. L-Competence</td>
<td>−.51</td>
<td>.11</td>
<td>.62</td>
<td>−.09</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>6. S-Competence</td>
<td>.78</td>
<td>−.90</td>
<td>−.42</td>
<td>.72</td>
<td>−.03</td>
<td>–</td>
</tr>
</tbody>
</table>

had less conflictual relationships with children during the initial 3-month transition, mothers who had more conflictual relationships were more likely to have preschoolers who showed steeper growth in social competence from T1 to T3. Other prospective paths were not significant and, consequently, were deleted from the model.

Initial status in social competence was positively related with that in mother–child closeness, $r = .558$, $p < .001$, and negatively related with that in conflict, $r = -.450$, $p < .001$. Overall, these results lent support to H3c (i.e., initial conflict predicts later growth in social competence), but not to H3a (i.e., closeness is associated negatively with social competence within T1), H3b (i.e., initial closeness predicts later growth in social competence), or H4 (i.e., initial social competence predicts later changes in mother–child relationships).
**Gender Invariance Analyses**

To assess whether the observed effects differed significantly between girls and boys, we tested and compared the constrained and unconstrained models mentioned earlier for the final model $M_2$. The fit indexes of the unconstrained model were $\chi^2(28, N = 115) = 32.546, p = .253$, CFI = .978, TLI = .967, RMSEA (90% CI) = .053 (.000–.119), SRMR = .108. The fit indices of the constrained model were $\chi^2(35, N = 115) = 46.297, p = .096$, CFI = .945, TLI = .934, RMSEA (90% CI) = .075 (.000–.128), SRMR = .124. Although the two models did not show very good fit to the data, they were evaluated primarily based on relative fit. The chi-square differences between the two models were not significant, $\delta$ Satorra–Bentler-scaled $\chi^2(7) = 13.400$, n.s., suggesting that boys and girls did not differ significantly in the observed effects.

**Control Variable Analyses**

Our final analyses examined to what extent the significant paths in $M_2$ would remain when the control variables (i.e., the child’s gender, age, approach/withdrawal, and maternal and paternal education) were added to $M_2$. We reran $M_2$ seven times, separately testing the robustness of each significant path by adding the set of correlated control variables representing potential common causes. For the prospective path $L$-Conflict $\rightarrow$ $S$-Competence, the magnitude increased to .453 and remained significant, $p = .043$, with the control variables in the model. For the path $L$-Closeness $\leftrightarrow$ $S$-Closeness, the magnitude increased to $-.472$ and remained significant, $p < .001$. For the path $L$-Closeness $\leftrightarrow$ $S$-Conflict, the magnitude decreased to $-.503$, but remained significant, $p < .001$. For the path $L$-Closeness $\leftrightarrow$ $L$-Competence, the magnitude increased to .611 and remained significant, $p < .001$. For the path $L$-Conflict $\leftrightarrow$ $L$-Competence, the magnitude increased to $-.505$ and remained significant ($p < .001$). For the path $L$-Closeness $\leftrightarrow$ $L$-Conflict, the magnitude increased to $-.278$ and remained significant, $p < .001$. Finally, for the path $S$-Closeness $\leftrightarrow$ $S$-Conflict, the magnitude increased to $-.163$ and remained significant, $p = .023$.

**Summary**

To summarize, the results showed support for most of our hypotheses. First, the results indicated that Chinese children’s relationships with mothers did not change significantly at the mean level during their nursery years; however, the relationships did show large amounts of individual differences in their changes over time during the nursery year. These individual differences were at least partly accounted for by initial levels of mother–child relationships during the initial 3-month transition. Second, the results revealed that Chinese children’s social competence showed a positive linear growth during their first 2 years of out-of-home care and education. There were significant individual differences among these children in their rates of growth in social competence. Third, the results found that conflict, rather than closeness, in mother–child relationships during the initial transition prospectively predicted rapid growth over time in social competence. Fourth, the results showed no support for the effect of social competence on changes in mother–child relationships. Finally, all the observed effects were not moderated by the child’s gender and proved robust to inclusion of potential “third-variable causes” implicated in previous research (Ahnert et al., 2004; Zhang & Chen, 2010).

**DISCUSSION**

As the rate of maternal labor force participation has increased dramatically in many countries, so has enrollment of young children in childcare facilities. Consequently, a growing body of research has been seeking to understand the role of nonparental care in attachment security and child development. In line with this research, we sought to ask the following questions: (a) How do Chinese children’s relationships with mothers change over time during the transition to out-of-home care (i.e., nursery care)? (b) How does social competence change over time among Chinese children during their first 2 years of out-of-home care and education? (c) Do mother–child relationships during the initial 3-month transition predict later growth in social competence? (d) Do mothers appear to respond to their children’s competence behaviors, increasing or decreasing the quality of their relationships with the children? (e) Do the relations between mother–child relationships and social competence differ across the child’s gender or prove robust to inclusion of potential candidates for common causes?

The results indicated no significant changes in children’s relationships with mothers during their nursery years. This finding replicates studies that were carried out on Western children aged 2 to 5 years, providing no evidence to support the claim that daycare undermines security (Belsky & Steinberg, 1978), using a sample of Chinese children. Although relationships with mothers did not change significantly at the mean level, we found significant individual variability in changes over time in the relationships. Presumably, the quality of some mother–child relationships might maintain during the nursery year while other relationships might shift from high to low quality or from low to high quality. This finding highlights the potential power of nonparental care to engender the instability of mother–child relationships, consistent with recent perspective on the role of stressful life events in the stability of mother–child relationships (Ahnert et al., 2004; Thompson, 1998). Moreover, the results further revealed that individual variability in changes in mother–child relationships was negatively associated with variations in the relationships formed during the initial 3-month transition. In other words, variations in changes in the relationships might be largely attributable to variations in initial status in the relationships during the initial transition. Specifically, lower closeness in mother–child relationships during the initial transition might lead to steeper growth in closeness, and higher conflict in mother–child relationships during the initial transition might lead to steeper decline in conflict. Other researchers have clearly demonstrated that more emotional distress (i.e., fussing and crying) during the period following childcare entry is associated with steeper decline over time in distress (Ahnert et al., 2004). It is possible that children’s fussing and crying behaviors following...
childcare entry elicit conflict interactions with mothers and make it hard for them to form close relationships with mothers. Because fussing and crying behaviors decline over children’s first years in daycare (Ahnert et al., 2004; Klein et al., 2010), mother–child relationships also may become closer and less conflictual over time. Notably, however, such changes in mother–child relationships also are likely due to regression to the mean at T2 based on ceiling or basal effects at T1.

The results also confirmed a positive linear growth in social competence among Chinese children during the 2-year follow-up period following nursery entry, presumably because positive growth in social competence is typical during early childhood regardless of children’s daycare experience (Lengua et al., 2007). Although the absence of a comparison group of children who were not enrolled in nursery care precludes any definitive conclusion, note that similar pattern of results has been observed in young children who did not have daycare experience (e.g., Raikes et al., 2007). Nonetheless, it is not reasonable to conclude that all children exhibit the same growth in their social competence. Instead, we found significant individual variability in rates of growth in social competence among Chinese children. This finding is consistent with recent research (Moilanen et al., 2010) that has suggested that children differ in their rates of growth in social competence during early childhood. It is possible that some children tend to exhibit rapid growth in social competence while others tend to show slow growth or even no growth in competence during early childhood.

Although variations in rates of growth in social competence were not associated with initial status in competence, the results found that these variations were predicted by conflict in mother–child relationships during the initial 3-month transition to nursery care. Specifically, the more conflictual relationships children had with mothers during the initial transition, the steeper growth their social competence during the 2-year follow-up. This finding highlights the potential power of mother–child conflict to engender growth in social competence during early childhood, consistent with recent studies carried out during the toddler and preschool years (Dunn & Herrera, 1997; Herrera & Dunn, 1997; Laible et al., 2008; Laible & Thompson, 2002). It also underscores the significance that mother–child conflict during the initial transition may have for later social development. We argued here that conflict experiences with mothers during the initial transition might be a potential opportunity for children to learn social skills. As demonstrated in previous research, many young children experience considerable difficulties adapting to the challenging environments in childcare institutions (e.g., Ahnert et al., 2004). Mothers’ behaviors during separation episodes may be particularly relevant to their children’s adaptation to out-of-home care because mothers primarily bring their children to daycare (Klein et al., 2010; Zhang et al., 2008). Within mother–child conflict, children are often involved in expressing their own needs (Laursen & Hafen, 2009), and mothers, in turn, may give their children many verbal explanations (Klein et al., 2010) and discuss social rules and standards with them (Dunn & Slomkowski, 1992). We thus speculate that during the initial transition to out-of-home care, conflict between mothers and their children were most likely to surround issues of socialization. Consequently, mother–child conflict during this period may socialize children with new roles, expectations, and standards that are demanded in the childcare setting and, in turn, may help them develop their social competence. We believe these speculations warrant further empirical investigations.

The results also showed that social competence was negatively related with mother–child conflict and positively related with closeness at 3 months after entry into nursery care. As suggested by Ahnert et al. (2004), the onset of nonparental care is so challenging that it may overwhelm any differences attributable to differences in early patterns of attachment; instead, it may engender changes in many children’s social behaviors and, in turn, their mother–child attachment. We therefore argue that the concurrent associations between social competence and mother–child relationships might reflect the impact that children’s competence behavior during the initial transition had on their subsequent relationships with mothers. That is, conflictual relationships might be largely attributable to children’s maladaptation to daycare while close relationships might be attributable to children’s adaptive behaviors.

In contrast, social competence during the initial 3-month transition did not predict later changes over time in mother–child relationships. A recent descriptive study has found that mothers showed daily changes in their responses to their child’s expressions of discomfort during the first few months in daycare (Klein et al., 2010). We speculate that the impact of children on parents might be more apparent during the period of initial adjustment to daycare than during later periods. Future studies that track changes in mother–child relationships during the initial transition will be helpful to assess whether our speculation is correct. In addition, there is a wide body of literature on the contributions of maternal depression (e.g., Campbell, Cohen, & Teri, 1995) and daily stress (e.g., Repetti & Wood, 1997) to the quality of mother–child relationships during the early years. It would be valuable if future research could consider including such factors and examine whether changes in mother–child relationships during the transition to daycare are associated with variations in mothers’ negative emotions and stress levels caused by children’s daycare entry.

The robustness of findings for our final model warranted follow-up analyses. First, our analyses of differential gender effects revealed that all the observed relations of interest showed gender invariance, indicating that the observed effects were operating similarly across boys and girls in this sample. Second, our common cause analyses explored how inclusion of the child’s gender, age, temperament, and maternal and paternal education would affect the observed effects. The results suggested that inclusion of broad individual and family socioeconomic status variables did not have significant impacts on these effects. Overall, the analyses suggested that all the observed relations of interest function similarly across the child’s gender and are robust to several alternative explanations that are implicated in previous research.

Several limitations of the present study should be noted. First, the sample was drawn from a relatively privileged, urban population of Chinese children who attended nursery. It is unclear
how the pattern of the results reported here would be in other Chinese children attending nursery or in a population of children not attending nursery. It also remains to be seen whether mother–child conflict during the initial transition to nonparental care can forecast later growth in social competence among children in other societies. Future studies that include more diverse samples would be helpful in answering these questions. Second, the present study did not test longitudinal measurement equivalence of our key measures due to the small sample size. Because the same instrument and informant were used for each key measure within a relatively short period (21 months), we assumed measurement equivalence over time. If a larger sample could be obtained in the future, measurement invariance over time should be established before any LGCM analyses. Third, mother–child relationships were measured only after the children had started nursery care. It would be valuable for future research to examine whether there are significant differences in the mean levels of mother–child–relationships measured before versus after Chinese children’s nursery entry. Moreover, mother–child relationships were assessed solely through maternal reports, which represent only part of the relationships. As Bruschweiler-Stern and Stern (1989) suggested, both representation of dyadic interactions and observed interactive behavior are important when assessing parent–child relationships. Future research that includes observational methods is needed. Fourth, we used mothers as sole informants of children’s social competence. Because teachers changed from T1 to T3, their ratings cannot be used for LGCM, in which each construct should be measured using the same informant and the same instrument; however, it would be valuable if future studies could use field observation or fathers’ ratings to complement mothers’ ratings. Finally, earlier studies have found that both quality of childcare and amount of time spent in childcare have an impact on mother–child relationships and children’s socioemotional competence (NICHD Early Child Care Research Network, 2003; Sagi et al., 2002); these factors were not included in the current study and should be considered in further research.

Despite the aforementioned caveats, the present study provides strong evidence for positive linear growth in social competence during early childhood and the linkage between mother–child conflict during the initial transition to daycare and later growth in social competence. Given the linear growth in children’s social competence, our results are broadly consistent with recent LGCM analyses of social competence during early childhood (Moilanen et al., 2010; Raikes et al., 2007). Moreover, using a sample of Chinese children, our findings replicate past research and suggest that nonparental care initiated in children’s third years of life may not engender changes in mother–child–relationships at the mean level but may bring large amounts of individual variability in such changes. More important, our findings extend past research and suggest that mother–child conflict during the initial transition to daycare may have positive consequences for children’s social development.

The results of this study have important implications for helping children to navigate the transition to nonparental care and develop their social competence. According to our findings, it might not be wise for mothers to avoid conflict with their children during the first few months following daycare entry. Recent research also has suggested that mothers’ “quick escape” from daycare center (and thereby avoiding conflict with children) might lead to considerable crying and distress in young children during the first few weeks following daycare entry (Klein et al., 2010), which in turn might hinder the development of their social competence. To enhance children’s social development during the transition to out-of-home care, it might be useful for parents who bring children to daycare to get involved in constructive conflict and to articulate and discuss expectations, standards, and social rules that are demanded in out-of-home care.

REFERENCES


