RUNNING HEAD: Environmental Interactions in the NICHD SECCYD

Double Jeopardy: Poorer Social-Emotional Outcomes for Children in the NICHD SECCYD Experiencing Home and Child Care Environments that confer Risk

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Abstract

Using data from the NICHD SECCYD, the authors examined whether interactions between home and child care quality affect children's social-emotional adjustment at 24, 36, and 54 months. Triadic splits on quality of home and child care were used to examine children in specific ecological niches, with a focus on those who experience the double jeopardy of poor quality home and child care environments. Children in this niche exhibited the highest levels of mother-reported problem behavior and the lowest levels of prosocial behavior. However, there was evidence that children from lower quality home environments were able to benefit from the compensatory influence of high quality child care. We call for policies aimed at the cross-context influences of protective and risky settings.

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Ecological theory is commonly employed as a framework for understanding early risk and protective factors that guide young children's developmental trajectories (Bronfenbrenner & Morris, 1998; Sameroff, 2000). Relevant findings have highlighted two enduring concepts -- cumulative risk and mesosystem influences -- that guided the current study and have the potential to inform efforts to promote raising healthy children. Starting with the health-focus of the Framingham Study (Dawber, 1980) and elaborated by Sameroff and colleagues to account for psychosocial outcomes (Sameroff, 2000; Sameroff, Seifer, & Zax, 1982), evidence has made it clear that no single risk factor is either necessary or sufficient to cause lasting harm to the child. This directs attention to examining dual- and cumulative-risk models of development (e.g. Sameroff, 2006). Moreover, an examination of cumulative risk necessarily entails studying the multiple contexts that comprise children's immediate experiences and, notably, the links among them. Within the child care field, ecological theory has led investigators to approach this developmental context as inherently neither a source of risk nor of protection, but rather as a context whose influence must be considered in the context of other important influences in the child's life (Phillips, McCartney, & Sussman, 2006). This focus on interconnections or mesosystems has directed research towards examination of the joint developmental influence of home and child care contexts (McCartney, 2006; Phillips, McCartney & Sussman, 2006).

The current study examines niche effects across low- and high-quality home and child care environments to determine the conditions under which young children are most at-risk for early social-emotional problems. A niche approach is important for policy purposes given that eligibility criteria for child care programs and subsidies rely on thresholds, rather than continuous indicators, to distinguish children who are and are not in high risk circumstances. We further include a number of important family and child care characteristics for the purpose of utilizing these data to identify promising avenues for

promoting healthy development and preventing later disorders. Avenues to be explored include the potential compensatory role of high quality child care and the moderating role of maternal depression.

Decades of research have illustrated the importance of both home and child care environments for many aspects of children's development (e.g., Belsky, 1990, 2001; Bronfenbrenner & Morris, 1998; Maccoby, 1992; NICHD ECCRN, 1998, 2004, 2005b). Fewer studies have identified significant interactions between family and child care factors, and many studies have focused only on low-income populations (e.g. Loeb, Fuller, Kagan, & Carrol, 2004; Votruba-Drzal, Coley, & Chase-Lansdale, 2004). It is clear that resource-poor child care and home environments can have independent negative effects on child development, with particularly strong effects for home characteristics (NICHD ECCRN, 2002a). However, research on the developmental consequences of child care has increasingly utilized ecological models that place child-care influences in the context of home experiences, child characteristics, family circumstances, and the broader societal-cultural-political context.

One useful framework for considering these transactions is a niche model, where a child can be seen to have experienced a *double protection* niche when both child care and home environments are high in protective factors, a *lost resources* niche when home environments are high in protective factors while child care factors confer risk, a *compensatory care* niche when risk factors at home are offset by protective factors at child care, and finally a *double jeopardy* niche, when risk factors occur in both environments (Phillips, 2006). This framework captures the multiple contextual influences contributing to children's healthy development.

Effects of the Home Environment

Regardless of their experience of non-parental child care, it is no surprise that home and parent characteristics are strongly predictive of how children behave, how they perform in school, how well they get along with others, and how likely they are to develop psychological disorders (Coie & Dodge, 1998;

Guralnick, 2006; Hastings, McShane, Parker, & Ladha, 2007). The "quality" of the home environment is generally approached as a mix of the quality of parent-child transactions (e.g., parental warmth and responsiveness, discipline practices), family orchestrated child experiences (e.g., learning resources and opportunities, selection of child care), and demographic characteristics (e.g., parent education and poverty) (Bornstein & Tamis-Lemonda, 1989; Bradley, 2002; Duncan & Brooks-Gunn, 1997; NICHD ECCRN & Duncan, 2003). Factors impinging on the mother have also received substantial attention, including parental stress, social support levels, and maternal depression (Dawson et al., 2003; Greenberg, Lengua, Coie, & Pinderhughes, 1999). Work on intergenerational transmission of risk further points to the importance of considering risk as an ongoing, transactional process. This has been demonstrated for physical growth, maltreatment, and cognitive outcomes (Chapman & Scott, 2001).

Narrowing the focus to children's social-emotional development, measures of family psychosocial risk, various dimensions of parent-child interaction, and home learning experiences have been shown to predict subsequent child social-emotional outcomes (Foster, Lambert, Abbot-Shim, McCarty, & Franze, 2005; Greenberg et al., 1999, NICHD ECCRN, 2005a), and family risk factors have been related to behavioral problems (NICHD ECCRN, 2002a). The experience of poverty is linked to less favorable family situations and child outcomes, partially due to less positive parenting practices (Dearing, McCartney, & Taylor, 2006; NICHD ECCRN, 2005a). Maternal factors, such as depressive symptoms, stress, and social support, also contribute to children's behavioral outcomes (Deater-Decker, Pinkerton, & Scarr, 1996; Greenberg et al., 1999).

Effects of the Child Care Environment

Aspects of the child care environment also influence children's development, but the effects appear to be more modest than those attributable to the family (e.g., NICHD ECCRN, 2005b). High-quality child care, measured through characteristics such as caregiver educational level and sensitivity, staff-child ratio, and environmental factors (e.g., space and materials), can have positive impacts on social-emotional

outcomes, particularly for children from low-income or at-risk environments (e.g., Clarke-Stewart, Vandell, Burchinal, O'Brien, & McCartney, 2002; Deater-Decker et al., 1996; Howes & Olenick, 1986; NICHD ECCRN, 2002a; Peisner-Feinberg et al., 2001; Votruba-Drzal et al., 2004). Intensive intervention programs such as the Perry Preschool Project (Schweinhart et al., 2005) and the Abecedarian project (Campbell, Ramey, Pungello, Sparling & Miller Johnson, 2002) demonstrate the potential long-term protective value of high quality early education for high-risk children. However, evidence on the long-term effects of child care quality is mixed (Belsky et al., 2007; Deater-Deckard et al.,1996; Peisner-Feinberg et al., 2001).

Joint Effects of Home and Child Care Environments

Studies examining the joint effects of low-quality home and child care environments indicate that family risk factors (i.e., poverty status, low maternal education, household size, unmarried mother, stressful life events, maternal depression, and parenting quality) and poor child care environments (i.e., poor environmental quality, caregiver insensitivity, and low caregiver education) are more predictive of internalizing and externalizing problems than are features of either environment considered alone (Greenberg et al., 1999).

Research further suggests that high-quality child care matters more for children who come from disadvantaged home environments, thereby demonstrating the potential of a compensatory care niche (Howes & Olenick, 1986; Peisner-Feinberg et al., 2001; Phillips, McCartney & Scarr, 1987; Vandell & Corasaniti, 1990; Votruba-Drzal et al., 2004). Several studies have found interactions between family risk and child care characteristics when predicting children's social-emotional development, particularly prosocial behaviors, and externalizing and internalizing behavior problems. The NICHD ECCRN (2002b) found that when their child's care was of low quality and the home environment was characterized by high levels of sociocultural risk (i.e., family income-to-needs ratio, maternal depression, level of social support, financial stress, marital quality, and parenting stress), mothers were more likely to rate their children as having fewer prosocial behaviors, indicating a double jeopardy effect. In contrast, family sociocultural risk

was not related to mothers' ratings of their children's prosocial behaviors when they were cared for in high-quality care arrangements, demonstrating compensatory care.

Similarly, using a sample of low-income families, Votruba-Drzal et al. (2004) found that high-quality child care attenuated the effects of less cognitive stimulation at home, demonstrating that compensatory care can act as a protective factor or buffer with regard to behavioral problems (Votruba-Drzal et al., 2004). Similar findings have been reported in other studies (e.g., Howes & Olenick, 1986; Peisner-Feinberg et al., 2001; Phillips et al., 1987; Vandell & Corasaniti, 1990).

Selection Factors

Family characteristics influence the type, quantity, and quality of children's child care arrangements (Gable & Cole, 2000; NICHD ECCRN, 1997, 2004; Singer, Fuller, Keiley, & Wolf, 1998). The quality of infants' experiences at home has been directly related to the quality of their child care settings (NICHD ECCRN, 1997). Similarly, mothers whose children are in high-quality child care tend to have more years of education (NICHD ECCRN & Duncan, 2003) and are more involved and more sensitive with their children (NICHD ECCRN, 1999). Children with single parents enter child care at earlier ages (Singer et al., 1998) and are more likely to be in home-based care (Gable & Cole, 2000). These family selection factors present three issues when examining children's outcomes in relation to home and child care characteristics. First, because family income, household structure, and maternal education are associated with both a family's selection of child care (e.g., Singer et al., 1998) and children's outcomes (e.g., Dearing et al., 2006; NICHD ECCRN & Duncan, 2003), these factors must be taken into account. Children with more behavioral problems may illicit poorer-quality caregiving from parents and child care providers which, in turn, aggravates their behavior problems. As a large-scale, longitudinal study, the NICHD SECCYD lends itself to this analysis because the effects of earlier social-emotional functioning can be controlled for in analytic models and there are children in every combination of home and child care environments.

The Current Study

Previous examinations of the NICHD SECCYD data using regression analyses on the whole sample have found relatively few interactions between home and child care environments on children's outcomes (e.g., NICHD ECCRN, 2002b). This earlier work differs from the current study in two important ways. First, we used predictor variables that assess similar constructs across contexts. Observations of the quality of caregiver-child interactions (from the Observer Ratings of the Caregiving Environment [ORCE]) provided the predictor variable for child care, and a composite parenting variable composed of HOME ratings and observations of mother-child interactions provided the predictor variable for the home environment. In contrast, the earlier NICHD paper (2002b) examined broad psychosocial, socioeconomic, and sociocultural risk at home while using the ORCE quality measure at child care. Second, we compared children at the ends of the distribution (in the Double Protection, Lost Resources, Compensatory Care, and Double Jeopardy niches), to a group experiencing average environments (in the middle third of the distribution). We then compared those in the Double Jeopardy group directly to the other three niches rather than testing for interactions across the full continuous range. As the NICHD ECCRN notes (2002b), this allows for a direct comparison of children experiencing qualitatively different environments rather than statistically assessing relative risk. Given the ecological approach used as a framework for the NICHD study and to answer the policy relevant question of which children are most in need of federal funds to support high quality child care, it was necessary to compare children experiencing different care profiles.

Five groups of children were created using triadic splits on the distribution of home and child care quality to test for effects based on a child's ecological niche. Children experiencing the Double Jeopardy niche (scores in the bottom third for child care *and* home quality ratings), the Compensatory Care niche (bottom third for home ratings and top third for child care ratings), the Double Protection niche (top third in both environments) and the Lost Resources niche (top third on the home ratings and bottom third on the child care ratings) were compared to children in the Reference group (scores in the middle third for both

environments), and children in the Double Jeopardy group were compared directly to the Double Protection, Lost Resources and Compensatory care groups.

We hypothesized that a Double Jeopardy effect would consistently occur such that children with both low quality home and non-maternal care would exhibit more internalizing and externalizing problems, more disruptive behaviors, and fewer prosocial behaviors than would children in any other group. We expected children in the Compensatory Care niche to have outcomes similar to the Reference group, reflecting the fact that high quality child care may be able to bring children experiencing low quality home environments into the range of children experiencing average quality environments. Similarly, we expected some additional enhancement to occur when children were spending the majority of their time in high quality environments both at child care and at home.

Method

Participants

The current study utilizes a sub-sample of families and children participating in the NICHD Study of Early Child Care and Youth Development. Families were recruited through hospital visits shortly after the birth of a child in 1991 at 10 locations across the United States. Recruitment and selection procedures are described in several publications (e.g. NICHD ECCRN, 1997; 1998). Of the initial pool of eligible families, 1,364 families were enrolled in the study when the infants were 1 month old. Participating families were similar to the eligible hospital sample on major demographic characteristics, with conditional sampling used to ensure adequate representation. However, the sample was not designed to be nationally representative; participating families averaged higher income, higher education, and were less likely to be of minority race or ethnicity than the general population. Further, children were excluded if a) mothers were less than 18; b) the family intended to move in the next year; c) infants were part of multiple births, had obvious developmental disabilities, or remained in the hospital more than seven days; d) mothers had medical problems, established substance abuse, or intended to have their child adopted; e) mothers did not speak

English, f) mothers lived more than an hour from the study site; or g) mothers lived in neighborhoods deemed by police too dangerous to visit.

The subsample of children included in the current study was limited to those in regular, nonmaternal child care at 24, 36, or 54 months who were in one of the five niche groups (described below) and who had nonmissing predictor and outcome data (*N* = 771). Of the 593 children in the original sample that were excluded, 306 had dropped out of the study, 32 children experienced maternal care only, and the remaining 255 were missing child care or parenting quality data, or had experienced patterns of child care and home environments not encompassed by the five niches examined in this study. Forty-nine percent of the included subsample was male, and 6% were Hispanic. Children in the sample were marginally less likely to be Black or African-American (11% vs. 14%), lived in higher-income families (income-to-needs ratio of 4.1 vs. 3.5), and their mothers averaged more education (14.6 vs. 14.2 years).

Data Collection

Data analyzed in the present study were collected from birth through 54 months. Demographic information was collected at 1, 6, 15, 24, 36 and 54 months via interviews with the mother. At 6, 15, 36, and 54 months the home environment was observed, and at 6, 15, 24, 36 and 54 months the primary non-maternal care environment was observed. Social-emotional development was rated by mothers and caregivers at 24, 36, and 54 months.

Measures

Predictors. Two predictor variables at 24, 36 and 54 months were used to create low and high quality niche groups. A parenting quality composite score was calculated from standardized scores on the Home Observation for Measurement of the Environment Scale (HOME: Caldwell & Bradley, 1984) and maternal sensitivity as rated from videotaped interactions. The quality of the child's primary non-maternal child care setting was assessed at 24, 36, and 54 months using the Observational Ratings of the Caregiving Environment (ORCE) designed for the original study by the NICHD ECCRN.

The HOME was administered when children were 15, 36 and 54 months old. The HOME contains 57 items on 8 subscales: learning materials; language stimulation; physical environment; parental responsivity; learning stimulation; modeling of social maturity; variety in experience; and acceptance of child. HOME scores at 24 months were imputed as the mean of the standardized scores at 15 and 36 months (see Belsky et al., 2007 for a similar use of imputation for Kindergarten HOME scores from 54-month and 3rd grade HOME scores). Inter-observer reliability was established through videotaped and live coding, was checked every three months during data collection, and all observers maintained a 90% agreement criterion with the master coder. Cronbach alphas exceeded .77 at each age for the full sample.

Assessments of mothers' sensitivity to their children's needs were derived from 15 minute semi-structured videotaped mother-child interactions at 24, 36, and 54 months. At 24 months, interactions were coded using 4-point ratings of maternal sensitivity to children's nondistress, intrusiveness (reversed), and positive regard. At 36 and 54 months, interactions were coded using 7-point ratings of supportive presence, hostility (reversed), and respect for autonomy. Cronbach alphas exceeded .70 at every age. The parenting composite variable at each age represents a mean of the standard scores for maternal sensitivity and actual or imputed HOME ratings. In the larger study, this composite has been an important predictor of children's cognitive and social competence (see NICHD ECCRN 2002a for review).

Children were observed in their primary non-maternal care setting on two days at each age. The ORCE is a 44-minute structured observation completed in 6 cycles. This study used the composite qualitative rating, which at 24 months was the mean of five ratings of the caregiver's behavior: sensitivity to child's non-distress signals, stimulation of child's development, positive regard toward child, detachment, and flatness of affect, with the last two scales reverse-coded (Cronbach's α = .87 at 24 months). At 36 months the composite was the mean of seven variables: sensitivity to child's non-distress signals, stimulation of child's development, positive regard toward child, fosters child's exploration, detachment, flatness of affect, and intrusiveness, with the last three scales reverse-coded (α = .83). At 54 months the

composite was the mean of sensitivity, stimulation of cognitive development, intrusiveness, and detachment with the last two reverse coded (α = .72).

Niche groups. Five niche groups were created by dividing both the Parent Composite and composite qualitative ORCE scores into thirds at each age (24, 36, and 54 months). The *double jeopardy* niche included children in the lowest thirds in both parenting and child care quality (*n* = 90 at 24 months, 102 at 36 months, and 85 at 54 months). The *compensatory care* niche included children in the lowest third of the parenting quality distribution and the highest third in the child care quality distribution (*n* = 44 at 24 months, 29 at 36 months, and 83 at 54 months). The *double protection* niche included children in the highest thirds on both parenting and child care quality (*n* = 95 at 24 months, 79 at 36 months, and 148 at 54 months). The *lost resources* niche included children in the highest third of the parenting quality distribution and the lowest third in the child care quality distribution (*n* = 73 at 24 months, 64 at 36 months, and 63 at 54 months). Finally, the *reference* group included children in the middle third for both parenting and child care quality. This group served as the reference or comparison group in regression models (*n* = 74 at 24 months, 101 at 36 months, and 81 at 54 months). Further contrasts compared children in the Double Jeopardy niche to the other three quality niches.

Children who did not fall into one of these five groups, for example those experiencing home or child care environments in the middle third and the other environment in the bottom or top third, were excluded. As noted, the sample sizes of each group changed over time, indicating that some children changed groups. There was no apparent pattern of movement between groups, with all possible patterns of movement represented by at least one child and the highest proportion of movement (5% of the sample), moving from the lost resources niche to the double protection niche, indicating a move into higher quality child care. As our samples sizes are relatively small and as the movement is limited and non-systematic, we elected to retain children who moved between groups in the appropriate group at each age.

Child Outcomes. Composite variables capturing both behavior problems and prosocial behavior were created from mothers' and primary caregivers' reports from the Child Behavior Checklist (CBCL: Achenbach, Edelbrock & Howell, 1987) and the Adaptive Social Behavior Inventory (ASBI: Hogan, Scott & Bauer, 1992). These composites reflect both problem behaviors (internalizing, externalizing, and disruptive behavior problems) and prosocial behavior (expressive and compliance behavior).

The CBCL 2-3y contains 99 items and was administered during home visits at 24, 36, and 54 months, and during child care visits at 24 and 36 months. Mothers and caregivers were asked to indicate how characteristic each problematic behavior was of the child during the last 2 months (0 = not true, 1 = sometimes true, 2 = very true). The instrument yields scores for internalizing and externalizing behavior problems. Test-retest reliability for the CBCL is .93 (Achenbach, 1991). In the full sample for the current study, alphas for the CBCL internalizing and externalizing scales as rated by mothers and caregivers at 24, 36, and 54 months ranged from .81 to .96.

At 24 and 36 months, mothers and caregivers completed the ASBI to assess social competence and disruptive behavior. The ASBI consists of three scales with a total of 30 items. The Express scale (13 items) taps sociability and empathy (α = .79), the Comply scale (10 items) reflects prosocial engagement and cooperation (α = .79), and the Disrupt scale (7 items) measures resistant and agonistic behaviors (α = .71). The mother or caregiver indicates the frequency of each behavior for the child (1 = rarely, 2 = sometimes, 3 = almost always). In the full sample for the current study the alphas for mother's ratings at 24 and 36 months were .77 and .76 for Express, .82 and .82 for Comply, and .60 and .62 for Disrupt, and for caregiver's ratings they were .82 and .84 for Express, .84 and .87 for Comply, and .70 and .73 for Disrupt. Two scales from the ASBI (Express and Comply) were standardized and summed to form composites of mother- and caregiver-reported prosocial behavior. This study uses mother- and caregiver-reported Internalizing and Externalizing Behavior from the CBCL, Disruptive Behavior from the ASBI and the Prosocial Behavior Composite score from the ASBI.

Control Variables. Thirteen child, family, and child care characteristics were included as controls (nine time-invariant and four time-varying covariates). The selection and coding of these variables was chosen based on the recommendations of the Early Child Care Research Network (1997) and Lamb (1998). Block 1 included the following background and demographic variables: child gender (1 = *male*, 0 = *female*), race (1 = *Black or African-American*, 1 = *not Black or African-American*), and ethnicity (1 = *Hispanic*, 0 = *not Hispanic)*; the time-varying covariates of child age and family-income-to-needs ratio collected at 24, 36 or 54 months; and data collection site (dummy coded). Block 2 included home and child care history variables including infant and toddler income-to-needs ratio (using data gathered at 6 and 15 months), a composite of sensitivity and HOME scores to reflect parenting history (using data gathered at 6 months), the age the child entered 10 or more hours of non-maternal child care, included in the model as fixed effects, and the mean number of hours per week the child spent in non-maternal care between 1 and 24 months.

In block 3 we included important family and child care covariates thought to contribute to caregiving quality including family structure, maternal education, maternal depression, maternal childrearing beliefs and beliefs about employment, hours per week mother works, current type of child care, and current hours per week in non-maternal care. Mothers reported their marital status (0 = single; 1 = partnered), type of child care (center care or not), hours of non-maternal care, and hours mother works per week during phone interviews at 24, 36, and 54 months. Maternal education was collected during the hospital visit at birth. Maternal reports of depressive symptoms were assessed at 1, 6, 15, 24, and 36 months with the Center for Epidemiological Studies Depression Scale, which has high internal consistency (α = .85) in the general population (CES-D; Radloff, 1977). We utilized the CES-D score collected at 24, 36, and 54 months, with Cronbach's alphas for the full sample ranging from .88 to .91. Mothers' childrearing attitudes were assessed using the Parental Modernity Scale of Child-rearing and Educational Beliefs, with internal consistency (α) between .88 and .94 (Schaefer & Edgerton, 1985). Mothers rated each of the 30 items on the questionnaire using a Likert-type scale during the 1-month home visit. Two subscales were calculated:

Progressive Beliefs and Traditional Beliefs. A continuous composite variable was created by subtracting Progressive from Traditional Beliefs scores, so that high scores indicate more traditional beliefs about childrearing. For this sample, Cronbach alpha was .84. The Attitudes toward Maternal Employment questionnaire (Greenberger, Goldberg, Crawford, & Granger, 1988) assessed mothers' beliefs about the costs and benefits of maternal employment. The Attitudes questionnaire has high internal consistency (α = .89 -. 94) and was administered at 1 month. A continuous composite variable was created by subtracting Costs scores from Benefits scores, so that high scores indicate positive beliefs about maternal employment. For this sample, Cronbach alphas were .88 for benefits and .80 for costs.

Analyses

Random-intercept linear regression models were used to predict children's social-emotional outcomes at 24, 36, and 54 months from their niche group. Separate models were run for each of the outcome variables entering basic demographic covariates in block 1, then entering variables reflecting the history of care the child received in block 2, and lastly entering family and child care variables that have been found to contribute to caregiving quality in block 3. Level one (fixed covariates) include: gender, race, ethnicity, data collection site, mean HOME and maternal sensitivity ratings at 6 months; mean number of hours of care 1-24 months, age beginning child care, family income in infancy, maternal education, maternal child rearing beliefs, and maternal attitudes toward employment. Level two (time-varying covariates) include: current family income, family structure, maternal depression, maternal work hours per week, hours per week in child care, and current type of child care.

Results

Descriptive Results

As expected, the niche groups differed significantly in several child, family, and child care characteristics. Means are provided in Table 1. When compared to children in the Reference group using robust clusters regression models to correct for non-independence, children in the Double Jeopardy (DJ)

and Compensatory Care (CC) niches more often experienced a number of developmental risk factors (see Table 1). In contrast, when compared to children in the Reference group, children in the Double Protection (DP) and Lost Resources (LR) niches more often experienced a number of developmental protective factors (see Table 1). Differences in demographic characteristics, beliefs, maternal characteristics, initial parenting quality score, and use of center care were also apparent (see Table 1).

Insert Table 1 here.

Niche Groups and Social-Emotional Outcomes

Mother-reported outcomes. Multilevel regression results for maternal reports of their children's social-emotional adjustment are reported in Table 2. In block 1, controlling for background characteristics only, children in the Double Jeopardy niche displayed more mother-reported internalizing, $B = 3.08$, $p < .001$, $d = .33$, externalizing, $B = 2.80$, $p < .001$, $d = .32$, and disruptive behaviors, $B = .43$, $p < .05$, $d = .22$, and fewer prosocial behaviors, $B = -.84$, $p < .001$, $d = .47$, than the Reference group. Younger children were rated by their mothers as displaying more internalizing, $B = -.09$, $p < .001$, and externalizing (marginally), $B = -.03$, $p = .05$, but fewer disruptive behaviors than older children, $B = .02$, $p < .05$, and lower-income children were rated by their mothers as being more internalizing (marginally), $B = -.15$, $p = .07$, externalizing, $B = -.19$, $p < .05$, and disruptive $B = -.05$, $p < .05$ than their higher-income peers. When the parenting quality and child care history variables were added to the model (see block 2), each of the associations between a child's classification in the Double Jeopardy niche and social-emotional outcomes remained significant, (see Table 2). Child age remained a significant covariate, but family income-to-needs did not.

Finally, when additional concurrent family and child care variables were added to the model (block 3), children in the Double Jeopardy niche no longer differed significantly from those in the Reference group in disruptive behavior. They did, however, continue to be rated by their mothers as displaying more internalizing and externalizing problems, as well as fewer prosocial behaviors (see Table 2). The most important factors accounting for the reduced explanatory value of experiencing the Double Jeopardy niche

were maternal depression, and, to a lesser extent, having authoritarian child-rearing beliefs. Enrollment in center-based care also partially accounted for the reduced contribution of the niche classifications, particularly for internalizing behavior. Because we hypothesized consistently poor outcomes for the Double Jeopardy group, we also explored whether the children in this group differed from those in the other three niches, focusing on Model 3. These children were rated by their mother as having more internalizing and externalizing behaviors than any of the other children, as well as fewer prosocial behaviors than children in the Double Protection and Lost Resources groups (see Table 2).

Children in the Double Protection niche were rated by their mothers as displaying fewer internalizing problems than those in the Reference group, with controls only for background characteristics (see Table 2, block 1). Children in the Compensatory Care niche exhibited fewer mother-rated prosocial behaviors than those in the Reference group. The difference for the Double Protection niche was reduced to non-significance in block 2, and the difference for the Compensatory Care niche was reduced to non-significance in block 3, primarily as a result of the explanatory power of maternal depression, maternal attitudes, and whether the child was in center-based care (see Table 2, block 3). Children in the Lost Resources niche did not differ from those in the Reference group on any mother-reported behaviors.

Insert Table 2 here.

Caregiver-reported outcomes. Regression results for caregiver-reported social-emotional outcomes are displayed in Table 3. Controlling for background characteristics only (block 1), children in the Double Jeopardy niche were rated by their caregivers as exhibiting more internalizing problems, $B = 2.89$, $p < .05$, $d = .27$, and fewer prosocial behaviors, $B = -1.96$, $p < .05$, $d = .26$, than children in the Reference group. Of the covariates in block 1, older children were rated as having fewer externalizing problems, $B = -.16$, $p < .01$, and being more prosocial, $B = .14$, $p < .01$, and boys were rated as having more externalizing problems, $B = 1.78$, $p < .05$ and fewer prosocial behaviors, $B = -1.62$, $p < .01$. While these differences for the Double Jeopardy group remained significant after controlling for parenting and child care history in

block 2, they were reduced to marginal (prosocial behaviors) and non-significance (internalizing problems) in block 3. Greater use of center-based child care largely explained caregiver ratings of higher internalizing problems and fewer prosocial behaviors (see Table 3).

Despite similarities, caregiver ratings differed from mothers in several ways. They did not rate children in the Double Jeopardy niche as higher in externalizing or disruptive behavior, nor did they rate children in the Compensatory Care niche as displaying fewer prosocial behaviors. They also rated children in the Double Protection niche as less externalizing, B = -2.80, p < .05, d = .28, and more prosocial, B = 2.10, p < .05, d = .28, than those in the Reference group when controlling only for background characteristics (see Table 3, block 1). Caregivers rated children in the Lost Resources niche as displaying fewer externalizing problems, B = -2.70, p < .05, d = .27, and, marginally, fewer disruptive behaviors, B = -.57, p = .07. The associations for externalizing and prosocial behavior remained significant after including numerous background, child care history, and family characteristics (in blocks 2 and 3).

When the contrasts were run comparing the Double Jeopardy niche to the other three niche groups (Model 3 only), those in the Double Jeopardy group were rated by their caregivers as displaying significantly more internalizing behaviors than all other groups, and more externalizing and disruptive behaviors and less prosocial behavior than those in Double Protection or Lost Resources groups.

Insert Table 3 here.

Discussion

Our exploration of children growing up in different ecological niches defined by the quality of their home and child care environments confirmed the importance of cross-context influences. Children in the four niches experiencing double jeopardy, double protection, lost resources, and compensatory care were found to display significantly different profiles of social-emotional behavior as preschoolers compared to their peers growing up in settings that fell within the mid-level of quality. The specifics of this overarching

conclusion varied somewhat with whether the rater of the child's behavior was the mother or the child care provider, but together they offer a complementary account of cross-context risk and protection.

As hypothesized, mothers who were characterized by low-quality HOME scores and low maternal sensitivity portrayed their children as having more internalizing and externalizing behavior problems and displaying less prosocial behavior than children in homes and child care programs in the middle of the quality distribution (the reference group) when their children were also in low-quality child care (the double jeopardy group). Their ratings of behavior problems did not, however, differ from those for the reference group when the children were in high-quality child care (the compensatory care group). This pattern of findings remained significant when extensive controls were included. The within-niche comparisons confirmed the disadvantages faced by children in the double jeopardy niche. These children had higher levels of mother-reported behavior problems than children in any of the other niches. In effect, children were reported by their mothers to have poorer social-emotional outcomes when they experienced conditions of double jeopardy, but not when high-quality child care created conditions of compensatory care. Even mothers observed to provide lower quality care to their children at home rated their children as having more problems compared to mothers of children in the reference group, thus suggesting that they were decidedly not "normalizing" their children's behavior.

This pattern of findings is consistent with existing evidence that characteristics of child care may matter more for children from more disadvantaged home environments (Burchinal, Peisner-Feinberg, Bryant, & Clifford, 2000; Caughy, DiPietro, & Strobino, 1994; Votruba-Drzal et al., 2006). It is noteworthy that this finding derives from the NICHD SECCYD in which measurement of home and child care quality was equally extensive and detailed. Much of this prior work has focused on cognitive and language development given the salient debate about the role of early intervention programs in preparing young children for school in the U.S. The current findings add social-emotional outcomes to this body of evidence. They imply that children who experience double jeopardy deriving from low-quality home and child care

environments are particularly at risk for compromised development. The non-experimental study design does not allow us to rule out the possibility that these findings may be explained by differences between children in these niches beyond the quality of care they experience. They results do, however, suggest that shifting children to a niche characterized by compensatory child care can make an important developmental difference. This is, of course, the core rationale for income-based early intervention programs.

The caregiver's ratings told a somewhat different, yet consistent, story. They portrayed children as having *fewer* externalizing behavior problems than children in the reference group when their home environments were of high quality, regardless of the quality of their child care settings. In the context of double protection, the caregivers also rated the children as having less internalizing and more prosocial behavior than their peers in the middle-range of home and child care settings. This is only partially consistent with our hypotheses, which predicted the beneficial influence of the double protection niche, but not of the lost resources niche. From the caregivers' perspective, an enriching home environment was consistently protective of the children regardless of whether this was experienced in the context of lost resources (namely, poor-quality child care) or double protection. The added protective benefit of high-quality child care was, however, seen in their ratings of lower internalizing and higher prosocial behavior. As with the mother ratings, the within-niche comparisons confirmed this pattern. Children in the double jeopardy niche were consistently rated as exhibiting poorer behavioral outcomes than those in the double protection and lost resources niches who experienced high-quality home environments.

This is consistent with prior evidence regarding the salience of the home environment as an influence on children's development, regardless of the extent and nature of their exposure to child care (NICHD ECCRN, 1998). It is particularly noteworthy that even the caregivers in low-quality child care settings rated children from high-quality homes as not showing the elevated levels of externalizing behavior that the child care literature has revealed in recent years (Belsky et al., 2007; Loeb et al., 2007; NICHD

ECCRN, 2003; Vandell & Corasaniti, 1990). As others have noted (McCartney, 2006), there are multiple reasons to expect that family variables would have an overriding influence on early development. Not only do family variables capture both genetic and environmental influences on development, but parents typically are the most consistent source of nurturance and support through-out early childhood.

Taken together, the pattern of findings provided by mothers and caregivers suggests that high-quality home environments, as captured by the high scores on the HOME measure and sensitive mothering, play a fairly pervasive protective role for the development of healthy social-emotional behavior. The social-emotional behavior of children growing up in homes that lack these protective influences is both vulnerable to the double jeopardy that occurs when they are exposed to poor-quality child care and open to the compensatory influence of high-quality child care environments. The caregiver ratings further demonstrate the double protection that can occur when children experience two high-quality rearing environments. While consistent, the mother and caregiver ratings did emphasize differing aspects of this story. Perhaps the behavioral benefits of high-quality child care carry over to the home environment in ways that are detectable only to mothers, whereas the benefits of a high-quality home environment noted by child care providers are most strongly sustained in the context of high-quality child care. Selection factors may also be involved. Nevertheless, the within-niche comparisons of mother and caregiver ratings were very consistent. Children in the double jeopardy group – the group of greatest interest to policymakers – received uniformly poorer behavioral ratings than did children in the other three niches.

For caregiver ratings, the positive findings for niche effects pertaining to children in the double protection and lost resources groups were more robust across models than was the case for any of the mother-reported findings. However, their ratings of children in the double jeopardy group as more internalizing and less prosocial in models with only demographic controls were largely explained by the child's enrollment in center-based care and, for prosocial behavior, also by variables capturing family income and parenting quality during the infant and toddler years. Interestingly, reliance on center-based

care was also associated with more negative behavioral ratings by mothers. This is reminiscent of prior findings suggesting that center-based care may exacerbate tendencies towards behavior problems among children in extensive hours of care (Belsky et al., 2007), although more recent evidence suggests that children also face socio-emotional problems in family day care (Gunnar, Kryzer, Van Ryzin, & Phillips, in press). Interestingly, the prior evidence focuses on externalizing behavior, while the work of Gunnar and colleagues – as in the current study – also emphasizes behaviors along the more internalizing spectrum. The fact that earlier (i.e., infant and toddler) parenting and family income variables also explained caregiver ratings of lower prosocial behavior among children in the double jeopardy niche is entirely in accord with a longstanding literature on the lasting detrimental effects of early exposure to poor parenting and poverty (Shonkoff & Phillips, 2000).

Study Limitations

While the NICHD Study of Early Child Care and Youth Development provides a unique wealth of data, a few limitations persist. First, the sample over-represents children and families experiencing lower risk. This became increasingly true over time as a result of substantial sample attrition and missing data. A full examination of niche effects would benefit from inclusion of children experiencing the most risky ecological environments. Second, the HOME assessment was not conducted at 24 months, thus we utilized imputed data using scores at 15 and 36 months. To reduce our dependence on this tool, we created the niche groups using a composite of the HOME scores and the parenting composite derived from observations of the mothers' interactional behavior during structured tasks. We further addressed this concern by using the initial parenting score at 6 months as a control in our block 2 models, so that we tested the unique added contribution of concurrent home and child care quality, controlling for the history of previous parenting. It is noteworthy that niche effects remained in models that included these stringent controls. Nevertheless, we cannot rule out the possibility that unmeasured differences between the

"double jeopardy" and "compensatory care" groups, beyond the quality of the care setting, may play a role in these findings.

Raising Healthy Children: Implications for Policy and Practice.

The complex developmental pathways that lead to physical and mental health problems, including aggression and other forms of anti-social behavior, have become increasingly well-understood (Dodge, 2002; Dodge, Malone, Lansford, Miller-Johnson, Pettit, & Bates, 2006; Reid, Patterson, & Snyder, 2002). The powerful role played by harsh, withdrawn, and inconsistent parenting, alongside possible contributions of extensive, poor-quality non-parental care in the early years of life is also quite well documented (e.g. Loeb et al., 2004; Sameroff, 2006). Accordingly, new intervention efforts aimed at short-circuiting the long-term impacts of exposure to circumstances that confer risk work across family and preschool settings in hopes of producing larger and more enduring impacts (e.g. Bierman, Domitrovich, Nix, et al, in press; Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999; Reid, Eddy, Fetrow, & Stoolmiller, 1999).

The findings from this study confirm the importance of integrating early intervention strategies and policies across these two contexts that create the immediate world in which young children grow up and move along paths towards competent or compromised development. Despite the many challenges involved (see Shonkoff & Phillips, 2000), the family context must have a central place rather than an "add-on" role in these endeavors. In fact, when considered in parallel to work on family involvement in school age children (e.g. Hill & Tyson, 2009), it may be beneficial for the healthy development of all children to increase the positive interactions between parents and child care providers. The findings also highlight the importance of efforts to ameliorate maternal depression as a core aspect of early intervention programs aimed at fostering healthy development (The National Academies, 2009). Maternal mental health may be just as potent a predictor of need as is resource restriction for family-focused early intervention, and should be central to efforts to prevent psychosocial disorders in children.

By the same token, it is the child care that children received through 36 months of age that was the focus of the variables we employed in this study. Fewer than 25% of the infants in this study were cared for by highly sensitive caregivers and fewer than 20% of toddlers were in settings "highly characteristic" of positive caregiving (NICHD ECCRN, 1996). High quality care in the first three years of life may be particularly hard for families to access, as many communities lack high quality placements for this age group (Phillips & Adams, 2001). Clearly we need to substantially increase the availability of high quality care for our youngest children.

A central remaining challenge involves identifying the mechanisms that work across home and child care settings to confer risk or protection. Candidates include (1) parent selection processes driven by both family demographics and parenting values, (2) parents' direct engagement in the child care setting through monitoring and communication with the child's caregivers, and (3) child evocative influences that carry across their caregiving environments. These possibilities point to programs aimed at strengthening parents' capacity and motivation to be informed child care consumers, accompanied by efforts to expand the quality of the child care options available to them. Another promising approach would target parent-provider communication through shared training opportunities and resources (including mental health consultation) to simultaneously enhance both contexts. Exciting work in health care settings has demonstrated that an effective strategy for helping parents deal constructively with difficult child behaviors involves guided discussion of on-site videotaped parent-child interactions (McClowry, Snow & Tamis-LeMonda, 2005). This type of guided on-site videotaped approach has recently been expanded to include child care providers (Biringen, 2008), and work in progress aims to simultaneously target parents and child care providers for an integrated intervention. The value of such efforts will, of course, lie in the success with which they enable more children to occupy the joint ecological niches that confer the greatest developmental benefits.

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Table 1. *Descriptive Statistics by Niche Group and Differences Relative to Reference for Covariates (N = 569)*

	Double Jeopardy	**Compensatory Care**	**Double Protection**	**Lost Resources**	**Reference**
Outcome Variables					
Internalizing Behavior (mother reports)					
24 months	54.05 (9.30)	48.58 (9.57)	47.52 (8.22)	47.73 (8.86)	48.78 (7.40)
	n = 85	*n* = 43	*n* = 94	*n* = 71	*n* = 72
36 months	53.95 (10.39)	52.24 (9.62)	47.51 (8.38)	48.21 (9.09)	49.85 (8.78)
	n = 98	*n* = 29	*n* = 77	*n* = 63	*n* = 99
54 months	49.18 (8.73)	47.51 (9.52)	45.31 (8.74)	45.44 (7.96)	47.37 (9.60)
	n = 83	*n* = 81	*n* = 145	*n* = 63	*n* = 81
Externalizing Behavior (mother reports)					
24 months	55.44 (7.99)	52.47 (8.83)	49.71 (7.25)	49.65 (9.31)	50.78 (6.54)
	n = 85	*n* = 43	*n* = 94	*n* = 71	*n* = 72
36 months	53.71 (9.61)	52.55 (7.22)	47.49 (7.21)	49.14 (7.91)	50.41 (7.96)
	n = 98	*n* = 29	*n* = 77	*n* = 63	*n* = 99
54 months	53.65 (9.03)	51.79 (10.21)	49.16 (7.5)	47.62 (8.89)	50.88 (9.84)
	n = 83	*n* = 81	*n* = 145	*n* = 63	*n* = 81
Disruptive Behavior (mother reports)					
24 months	10.71 (1.85)	10.28 (2.16)	10.01 (1.74)	9.94 (1.74)	9.84 (1.60)
	n = 84	*n* = 43	*n* = 94	*n* = 71	*n* = 70
36 months	11.02 (2.31)	10.93 (2.12)	9.95 (1.65)	9.98 (1.63)	10.50 (1.68)
	n = 97	*n* = 29	*n* = 76	*n* = 62	*n* = 100
Prosocial Behavior (mother reports)					
24 months	-.77 (1.78)	-.50 (1.76)	.70 (1.51)	.56 (1.49)	.64 (1.48)
	n = 85	*n* = 43	*n* = 94	*n* = 71	*n* = 72
36 months	-.88 (1.87)	-.56 (1.80)	.85 (1.51)	.46 (1.47)	.17 (1.38)
	n = 98	*n* = 29	*n* = 77	*n* = 63	*n* = 100
Internalizing Behavior (caregiver reports)					
24 months	51.81 (11.24)	48.25 (10.76)	45.20 (8.65)	46.58 (10.86)	49.22 (12.25)
	n = 73	*n* = 40	*n* = 82	*n* = 60	*n* = 65
36 months	52.86 (10.55)	46.46 (10.97)	47.48 (11.13)	47.62 (9.90)	47.91 (9.58)
	n = 85	*n* = 26	*n* = 64	*n* = 53	*n* = 89
Externalizing Behavior (caregiver reports)					
24 months	50.43 (10.02)	49.43 (9.42)	45.79 (9.26)	45.05 (8.53)	48.42 (10.51)
	n = 73	*n* = 40	*n* = 82	*n* = 60	*n* = 65
36 months	49.85 (10.92)	47.58 (8.36)	43.38 (8.63)	44.15 (10.02)	46.56 (8.89)
	n = 85	*n* = 26	*n* = 64	*n* = 53	*n* = 89
Disruptive Behavior (caregiver reports)					
24 months	10.51 (2.65)	9.59 (2.16)	9.89 (2.01)	9.16 (2.26)	10.05 (2.65)
	n = 70	*n* = 39	*n* = 76	*n* = 55	*n* = 63
36 months	10.72 (2.90)	10.11 (1.95)	9.64 (2.16)	9.98 (2.41)	10.1 (2.28)
	n = 85	*n* = 27	*n* = 64	*n* = 53	*n* = 90
Prosocial Behavior (caregiver reports)					
24 months	-4.35 (8.20)	-1.19 (5.83)	2.16 (5.50)	-.74 (6.78)	-.34 (7.10)
	n = 71	*n* = 40	*n* = 82	*n* = 56	*n* = 63
36 months	-1.90 (8.30)	-.22 (8.24)	2.80 (6.47)	2.93 (6.16)	.74 (6.52)
	n = 86	*n* = 27	*n* = 63	*n* = 53	*n* = 93
Block 1: Stable Background Characteristics					
Sex (child is male)	57%	51%	46%	46%	50%
	ns	*Ns*	*ns*	*ns*	
Race (child is Black)	30%	21%	<1%	4%	7%

	z(874) = 6.14***	*z*(874) = 4.18***	*z*(874) = -4.55***	*ns*	
Ethnicity (child is	10%	6%	3%	1%	7%
Hispanic/Latino)	*ns*	*ns*	*z*(874) = -2.99**	*z*(874) = -3.28***	
Family income-to-needs	2.45 (2.23)	2.94 (2.66)	5.51 (4.30)	5.12 (3.06)	4.15 (3.45)
ratio	*t*(866) = -7.12***	*t*(866) = -4.34***	*t*(866) = -4.37***	*t*(866) = 3.50***	
Block 2: Home and Child Care History					
Initial HOME &	-.60 (.86)	-.41 (.89)	.47 (.54)	.38 (.59)	.15 (.63)
sensitivity (6 months)	*t*(862) = -10.63***	*t*(862) = -7.53***	*t*(862) = 6.98***	*t*(862) = 4.33	
Infant-toddler Income	2.42 (2.08)	2.99 (2.47)	5.51 (3.85)	4.96 (3.00)	4.14 (3.01)
(6-15 months)	*t*(868) = -7.57***	*t*(868) = -4..47***	*t*(868) = 4.33***	*t*(868) = 3.11**	
Age of entry into child	6.24 (7.15)	6.48 (8.67)	5.62 (6.76)	4.56 (4.68)	4.92 (4.95)
care (in months)	*t*(874) = 2.59*	*t*(874) = 2.33*	*ns*	*ns*	
Mean number of hours	29.49 (11.44)	28.44 (12.58)	25.26 (13.02)	30.94 (10.58)	29.93 (11.31)
of care 1-24 months	*ns*	*ns*	*t*(789) = -4.47***	*ns*	
Block 3: Important Family and Child Care Covariates					
Family structure	68%	80%	97%	95%	87%
(mother is partnered)	*z*(861) = -5.46***	*z*(861) = -2.28*	*z*(861) = 4.91***	*z*(861) = 3.01**	
Maternal education	13 (2.03)	13.37 (2.25)	15.97 (2.11)	15.51 (2.22)	14.82 (2.28)
(in years)	*t*(873) = -10.18***	*t*(873) = -6.83***	*t*(874) = 6.61***	*t*(874) = 3.40**	
Maternal depression	11.69 (8.80)	11.68 (9.39)	6.93 (6.11)	6.88 (6.92)	7.83 (7.62)
	t(862) = 5.59***	*t*(862) = 4.79***	*ns*	*ns*	
Mother's childrearing	36.67 (15.11)	34.11 (15.20)	17.13 (13.97)	19.12 (14.41)	24.21 (13.62)
beliefs	*t*(872) = 9.55***	*t*(872) = 7.12***	*t*(872) = -6.13***	*t*(872) = -3.95***	
Hours per week mother	31.61 (17.64)	29.38 (16.78)	27.06 (17.83)	33.34 (15.21)	31.05 (16.17)
works	*ns*	*ns*	*t*(868) -3.05**	*ns*	
Mother's attitudes	2.33 (6.38)	1.06 (5.95)	1.23 (7.29)	4.21 (7.21)	2.54 (6.50)
toward employment	*ns*	*t*(874) = -2.65**	*t*(874) = -2.55*	*t*(874) = 2.61**	
Mean number of hours	39.33 (13.82)	38.09 (14.66)	33.66 (13.88)	39.15 (13.73)	36.71 (13.55)
of nonmaternal care	*t*(874) = 2.38*	*ns*	*t*(874) = -2.89**	*t*(874) = 2.02*	
Child in Center care (%)	44%	56%	59%	66%	50%
			t(789) = -2.20*	*t*(789) = 3.32**	
Quality Measures Used to Create Niche Groups					
Quality of child care	2.19 (.30)	3.42 (.20)	3.47 (.22)	2.28 (.28)	2.92 (.14)
	t(874) = -12.01***	*t*(874) = 3.96***	*t*(874) = 10.45***	*t*(874) = -7.15***	
Parenting quality	-.94 (.63)	-.82 (.53)	.80 (.24)	.78 (.25)	.15 (.19)
composite	*t*(874) = -19.10***	*t*(874) = -14.24***	*t*(874) = 15.39***	*t*(874) = 10.86***	
Number of observations	353	210	439	250	325
(child-years)					

Table 2. Multilevel Model Results Predicting Mother-reported Social-Emotional Outcomes from Low and High Quality Home and Child Care Environment Ratings

	Internalizing			Externalizing			Disruptive			Prosocial		
	Coef	SE	z-ratio	Coef	SE	z-ratio	Coef	SE	z-ratio	Coef	SE	z-ratio
Block 1: Niche Groups with Stable Background Characteristics Only												
Double Jeopardy	3.08	.79	3.88***	2.80	.72	3.88***	.43	.21	2.03*	-.84	.18	-4.81***
Compensatory Care	-.41	.87	-.47	1.09	.79	1.38	.35	.26	1.37	-.74	.21	-3.51***
Double Protection	-1.42	.71	-2.00*	-.93	.64	-1.44	-.09	.20	-.43	.22	.16	1.34
Lost Resources	-.67	.79	-.85	-.81	.71	-1.14	-.22	.21	-1.04	.14	.18	.78
Child Age	-.09	.02	-5.30***	-.03	.02	-1.96+	.02	.01	2.26*	-.01	.01	-.93
Child is Male	.44	.60	.72	-.02	.57	-.03	-.19	.15	-1.32	-.51	.13	-3.97***
Child is Black	.88	1.03	.85	.70	.97	.72	.62	.27	2.32*	-.76	.23	-3.33**
Child is Hispanic	.60	1.40	.43	-1.24	1.33	-.94	-.18	.33	-.55	-.48	.29	-1.65+
Family income-to-needs ratio	-.15	.09	-1.79+	-.19	.08	-2.33*	-.05	.03	-1.98*	.02	02	.80
Intercept	53.98	1.34	40.20***	53.99	1.24	43.48***	1.10	.74	1.49	.92	.35	2.64**
Block 2: Niche Groups with Stable Background Characteristics and Home and Child Care History												
Double Jeopardy	3.22	.82	3.92***	2.80	.75	3.74***	.40	.22	1.78+	-.71	.18	-3.84***
Compensatory Care	-.19	.90	-.21	1.06	.82	1.29	.33	.26	1.27	-.69	.22	-3.18**
Double Protection	-1.19	.72	-1.65+	-.73	.65	-1.12	-.02	.20	-.11	.17	.16	1.05

Lost Resources	-.61	.79	-.77	-.80	.72	-1.11	-.20	.22	-.94	.09	.18	.53
Child Age	-.09	.02	-5.11***	-.03	.02	-1.65	.02	.01	2.36*	-.01	.01	-.75
Child is Male	.42	.61	.69	<.01	.58	<.01	-.19	.15	-1.26	-.51	.13	-3.91***
Child is Black	.90	1.09	.82	.83	1.04	.80	.64	.28	2.28*	-.59	.24	-2.48*
Child is Hispanic	.25	1.42	.18	-1.38	1.35	-1.03	-.12	.34	-.36	-.33	.29	-1.12
Family current income-to-needs ratio	-.18	.12	-1.47	-.20	.11	-1.85+	-.05	.04	-1.30	-.01	.03	-.38
Initial Parenting score (6 months)	-.37	.47	-.78	-.16	.44	-.36	-.03	.12	-.24	.19	.10	1.86+
Mean Hours Non-Maternal Care 1-24 mo	<.01	.03	-.03	.03	.03	.95	.01	.01	1.40	.01	.01	.77
Age of Entry in Non-maternal Care (mo)	-.05	.05	-1.06	-.05	.05	-1.08	.02	.02	.95	-.01	.02	-.78
Infant-toddler income (6-15 months)	.05	.15	.32	.02	.14	.12	<.01	.04	-.08	.03	.03	.86
Intercept	53.86	1.71	31.44***	53.45	1.60	33.37***	.48	.95	.50	.72	.43	1.66+
Block 3: Niche Groups with Stable Background Characteristics, Home and Child Care History, and Important Family and Child Care Covariates												
Double Jeopardy	2.31	.85	2.74**	2.42	.78	3.11**	.24	.23	1.02	-.46	.19	-2.37*
Compensatory Care	-.87	.92	-.95	.47	.84	.56	-.01	.27	-.03	-.44	.23	-1.90+
Double Protection	-1.12	.74	-1.52	-.72	.67	-1.07	-.04	.20	-.21	.17	.17	1.02
Lost Resources	-.61	.80	-.76	-.63	.73	-.86	-.20	.22	-.94	.17	.18	.92
Child Age	-.12	.02	-5.60***	-.03	.02	-1.41	.02	.01	2.12*	<.01	.01	-.14
Child is Male	.46	.59	.77	.10	.57	.17	-.16	.15	-1.10	-.55	.13	-4.18***

Child is Black	.74	1.15	.64	.31	1.11	.28	.38	.30	1.26	-.63	.27	-2.36*
Child is Hispanic	-.36	1.39	-.26	-1.67	1.35	-1.24	-.22	.34	-.66	-.17	.30	.58
Family income-to-needs ratio	-.09	.12	-.72	-.11	.11	-1.02	-.03	.04	-.89	-.02	.03	-.63
Initial Parenting score (6 months)	.35	.49	.72	.29	.47	.62	-.01	.13	-.10	.07	.11	.60
Mean Hours Non-Maternal Care 1-24 mo	.04	.04	.97	.06	.03	1.62	.02	.01	1.51	.01	.01	.58
Age of Entry in Non-maternal Care (mo)	-.06	.05	-1.33	-.04	.05	-.96	.03	.02	1.51	-.01	.02	-.42
Infant-toddler income (6-15 months)	.09	.15	.60	.03	.14	.18	-.01	.04	-.13	.03	.04	.83
Family Structure	-.31	.91	-.34	-1.31	.86	-1.53	-.31	.25	-1.26	-.15	.21	-.71
Maternal Education	-.07	.16	-.45	-.03	.16	-.17	.06	.04	1.48	-.01	.04	-.25
Maternal Depression	.19	.03	5.47***	.13	.03	4.04***	.05	.01	4.71***	-.03	.01	-4.12***
Maternal Child Rearing Beliefs	.07	.02	3.06**	.03	.02	1.13	.01	.01	1.17	-.02	.01	-3.02**
Maternal Work Hours per Week	<.01	.02	-.26	-.03	.02	-1.67+	<.01	.01	.65	<.01	.01	-.30
Maternal Attitudes toward Employment	-.08	.05	-1.50	-.05	.05	-.97	-.02	.01	-1.45	.01	.01	.65
Hours per week in Non-maternal Care	-.02	.02	-.87	.01	.02	.26	<.01	.01	.30	<.01	.01	.16
Current type of Child Care	1.29	.60	2.15*	-.10	.55	-.18	.10	.16	.61	-.25	.14	-1.85+
Intercept	51.40	3.23	15.93***	52.59	3.09	17.04***	1.75	.78	2.31*	-1.14	1.65	-.69
N		771			771			574			576	

+ $p < .10$; *$p < .05$, **$p < .01$, ***$p < .001$

Table 3. Multilevel Model Results Predicting Caregiver-reported Social-Emotional Outcomes from Low and High Quality Home and Child Care Environment Ratings

	Internalizing			Externalizing			Disruptive			Prosocial		
	Coef	SE	z-ratio	Coef	SE	z-ratio	Coef	SE	z-ratio	Coef	SE	z-ratio
Block 1: Niche Groups with Stable Background Characteristics Only												
Double Jeopardy	2.89	1.27	2.27*	1.03	1.14	.90	.31	.30	1.03	-1.96	.84	-2.33*
Compensatory Care	-.43	1.54	-.28	.39	1.38	.28	-.21	.36	-.57	-.77	1.02	-.76
Double Protection	-2.51	1.22	-2.06*	-2.80	1.10	-2.56*	-.28	.29	-.98	2.10	.81	2.58*
Lost Resources	-1.12	1.31	-.85	-2.70	1.17	-2.30*	-.57	.31	-1.82+	.91	.88	1.03
Child Age	.03	.06	.51	-.16	.05	-2.88**	.01	.02	.91	.14	.04	3.30**
Child is Male	1.19	.89	1.34	1.77	.82	2.17*	.18	.20	.89	-1.62	.58	-2.79**
Child is Black	1.68	1.57	1.07	1.43	1.43	.99	.64	.36	1.81+	-2.03	1.03	-1.96+
Child is Hispanic	6.73	2.02	3.33**	.90	1.86	.48	.64	.45	1.42	-1.34	1.32	-1.02
Family income-to-needs ratio	.27	.15	1.78+	-.11	.14	-.79	.01	.04	.37	<.01	.10	<.01
Intercept	47.09	2.59	18.21***	53.02	2.30	23.05***	.36	1.10	.32	-4.59	1.74	-2.65**
Block 2: Niche Groups with Stable Background Characteristics and Home and Child Care History												
Double Jeopardy	2.79	1.34	2.08*	1.01	1.20	.85	.15	.32	.48	-1.76	.88	-2.00*
Compensatory Care	-.28	1.58	-.18	.73	1.41	.52	-.28	.37	-.74	-.89	1.03	-.86

Double Protection	-2.82	1.26	-2.24*	-3.09	1.12	-2.76**	-.22	.30	-.74	2.53	.83	3.05**
Lost Resources	-1.00	1.33	-.75	-2.55	1.18	-2.16*	-.51	.32	-1.61	.82	.89	.93
Child Age	.04	.06	.59	-.16	.05	-2.89**	.02	.02	1.00	.16	.04	3.76***
Child is Male	1.03	.91	1.14	1.77	.83	2.13*	.17	.21	.84	-1.77	.59	-2.99**
Child is Black	1.11	1.68	.66	1.42	1.53	.93	.36	.38	.95	-2.16	1.10	-1.96*
Child is Hispanic	7.10	2.06	3.45**	1.33	1.89	.70	.70	.46	1.52	-1.52	1.34	-1.14
Family income-to-needs ratio	.11	.23	.48	-.52	.21	-2.50**	<.01	.05	-.04	.25	.15	1.62
Initial Parenting score (6 months)	-.12	.74	-.16	.05	.68	.08	-.23	.17	-1.35	.26	.48	.53
Mean Hours Non-Maternal Care 1-24 mo	.02	.05	.42	.06	.04	1.33	.02	.01	1.66+	.07	.03	2.30*
Age of Entry in Non-maternal Care (mo)	.20	.11	1.75+	.17	.10	1.63	.04	.03	1.38	.05	.07	.70
Infant-toddler income (6-15 months)	.22	.24	.91	.56	.22	2.55*	.03	.06	.50	-.36	.16	-2.27*
Intercept	44.95	3.19	14.07***	49.71	2.85	17.46***	-.13	1.37	-.09	-6.96	2.12	3.29**
Block 3: Niche Groups with Stable Background Characteristics, Home and Child Care History,` and Important Family and Child Care Covariates												
Double Jeopardy	2.29	1.43	1.60	.13	1.28	.10	<.01	.34	<.01	-1.82	.95	-1.93+
Compensatory Care	-1.19	1.69	-.71	.11	1.52	.07	-.44	.40	-1.09	-.10	1.11	-.09
Double Protection	-2.24	1.29	-1.74+	-3.03	1.16	-2.61**	-.20	.31	-.64	2.33	.86	2.72**
Lost Resources	-1.59	1.36	-1.17	-2.98	1.22	-2.44*	-.50	.33	-1.52	1.23	.91	1.35
Child Age	-.03	.07	-.43	-.17	.06	-2.85**	.01	.02	.83	.19	.05	4.24***

Child is Male	1.23	.94	1.31	2.08	.85	2.47*	.21	.21	.97	-1.88	.61	-3.08**
Child is Black	.08	1.89	.04	.63	1.69	.37	.09	.43	.22	-1.61	1.23	-1.31
Child is Hispanic	6.15	2.19	2.81**	-.35	1.96	-.18	.55	.49	1.11	-1.03	1.41	-.73
Family income-to-needs ratio	.16	.25	.64	-.42	.22	-1.89+	.04	.06	.64	.24	.16	1.47
Initial Parenting score (6 months)	.21	.80	.27	.34	.72	.48	-.17	.18	-.93	.31	.52	.59
Mean Hours Non-Maternal Care 1-24 mo	<.01	.06	-.01	.02	.06	.34	.02	.02	1.45	.06	.04	1.44
Age of Entry in Non-maternal Care (mo)	.21	.12	1.72+	.16	.11	1.53	.05	.03	1.84+	.04	.08	.57
Infant-toddler income (6-15 months)	.20	.26	.76	.46	.23	1.98*	.01	.06	.20	-.32	.17	-1.92+
Family Structure	.45	1.49	.30	1.54	1.34	1.15	-.14	.35	-.40	-.82	.99	-.82
Maternal Education	-.33	.26	-1.27	-.16	.23	-.69	-.04	.06	-.65	.01	.17	.06
Maternal Depression	.09	.06	1.49	.12	.05	2.21*	.02	.01	1.51	-.07	.04	-1.74+
Maternal Child Rearing Beliefs	.04	.04	1.07	.06	.03	1.72+	.01	.01	1.02	-.01	.02	-.49
Maternal Work Hours per Week	.05	.04	1.37	.02	.03	.69	<.01	.01	-.46	<.01	.02	-.04
Maternal Attitudes toward Employment	.03	.08	.35	.11	.07	1.50	.02	.02	.83	-.01	.05	-.16
Hours per week in Non-maternal Care	<.01	.05	-.05	.02	.04	.53	<.01	.01	.14	<.01	.03	-.02
Current type of Child Care	3.35	1.02	3.30**	.11	.91	.12	-.08	.24	-.34	-1.98	.66	-2.99**
Intercept	46.34	5.48	8.46***	47.81	4.92	9.73***	-.06	2.37	-.03	-4.93	3.60	-1.37
N	508			508			495			503		

+ $p < .10$; *$p < .05$, **$p < .01$, ***$p < .001$