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Children's Elicitation of Changes in Parenting during the Early Childhood Years

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Abstract

Using a subsample of the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B; n = 1,550), this study identified parents who engaged in more developmentally problematic parenting—in the form of low investment, above average television watching, and use of spanking—when their children were very young (M = 24.41 months, SD = 1.23) but changed their parenting in more positive directions over time. Latent profile analysis and other techniques revealed that parents who demonstrated less optimal parenting behaviors when their children were 2 years old were more likely to be African American, from lower socioeconomic backgrounds, and experiencing greater depressive symptoms. Approximately half of such parents, however, made positive changes in their parenting practices, with 5% in the profile characterized by high investment and low use of spanking by the time that their children were in elementary school. These positive changes in parenting behavior were more likely to occur among parents whose children were already demonstrating early reading skills and less problem behavior. These potential "child effects", suggesting that children elicited improvements in parenting, were more pronounced among higher income families but did not vary according to parents' educational attainment. Findings from this study have important implications for intervention programs, suggesting that children's academic and behavioral skills can be leveraged as one means of facilitating positive parenting.

Keywords

Child Effects; Parental Investment; Spanking; Television Viewing; Latent Profile Analysis; ECLS-B

Early childhood is increasingly viewed as a critical period in lifelong development. The skills, resources, and capacities developed during these years can be carried forward through childhood and adolescence and into adulthood, influencing family formation, health, and socioeconomic attainment as well as sociodemographic disparities in these domains (Duncan et al., 2007; Palloni, 2006; Schweinhart et al., 2005). Thus, understanding the

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ecology that shapes early childhood development is important to children's short- and long-term trajectories. Families are central to this ecology, and developmental research has elucidated many types of parenting that promote the current and future development of young children (Davis-Kean, 2005; Gershoff, Aber, Raver, & Lennon, 2007; Yeung, Linver, & Brooks–Gunn, 2002). Yet, such positive parenting, or the lack thereof, is not static or immutable, as some parents do change how they parent over time (Fuligni et al., 2013; Landry, Smith, Swank Assel, & Vellet, 2001). Such parenting, at any one time or over time, is multi-faceted, including but not limited to parents' investment, time use, and discipline, and needs to be conceptualized and operationalized holistically.

In this spirit, might some seemingly at-risk parents take on more positive multi-dimensional profiles of parenting over time? Our attempt to answer this question draws on the developmental systems perspective (Lerner, 2006), which emphasizes how child development occurs as part of a dynamic transactional process between children and their proximate ecologies within larger social contexts and systems. By applying latent profile analysis and longitudinal modeling techniques to data from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), we consider constellations of parenting behaviors across early childhood. Specifically, we examine a dimension of parenting that is consistently implicated in the development of school readiness across early childhood (investment) but do so in the context of other dimensions of parenting (television watching, spanking) that are also directly or indirectly related to school readiness but are rarely viewed in conjunction with investment (Brooks-Gunn & Markman, 2005). We also shift the focus away from children as passive recipients of parenting to explore how they evoke the parenting that they receive; the so-called "child effects" that are theoretically meaningful but under-studied (Crosnoe, Augustine, & Huston, 2012; Lugo-Gil, & Tamis-LeMonda, 2008). Child effects may vary across the socioeconomic spectrum, mattering more for some families than others, which we consider in this study (Dearing, McCartney, & Taylor, 2001; Magnuson, 2007; Yoshikawa, Aber, & Beardslee, 2012). Such research can advance theory by better capturing the dynamic bidirectional interplay between parents and children and inform policy by pointing to where social resources should be allocated.

Conceptualizing Early Parenting

Parents can support the healthy pro-social development of their children in many ways (e.g., warmth, attachment; Parke, 2004). In recent years, the cross-fertilization of psychology, sociology, and economics has increased attention to parental investment, or the amount of money and time that parents spend on and with their children to develop their human capital (Foster 2002; Kalil, Ryan, & Corey, 2012). Investment behaviors include providing learning materials and directly (e.g. reading with children) and indirectly (e.g. visiting museums, extracurricular activities) supporting learning. Although these enriching experiences are important for children's educational prospects (Gershoff et al., 2007; Mistry, Benner, Biesanz, Clark, & Howes, 2010; Yeung et al., 2002), they need to be considered within the broader context of family processes that also support school readiness (i.e., parenting typologies; Cook, Roggman, & D'zatko, 2012; Fuligni et al., 2013; McGroder, 2000; Mendez, Carpenter, LaForett, & Cohen, 2009). After all, the same investments might not bring the same returns for children if they are coupled with certain parenting practices in one

family and completely different practices in another (Crosnoe & Trinitapoli, 2008). Thus, parents' investment behaviors should be considered more holistically, along with other parenting behaviors that may not be explicitly connected to school readiness in the minds of parents but that are known to shape children's skills and competencies.

One other aspect of parenting is discipline. Sensitive and responsive parenting can develop a healthy and productive balance between autonomy and control while also facilitating children's early social and behavioral skills—two keys to school readiness and future success (Heckman & Kautz, 2012). In contrast, punitive practices are associated with adverse outcomes, such as aggression (Gershoff, Lansford, Sexton, Davis-Kean, & Sameroff, 2012), academic struggles (Ferguson, 2012), lower engagement with learning (Ansari & Gershoff, 2015), and anxiety (Wood, McLeod, Sigman, Hwang, & Chu, 2003). In particular, the disciplinary practice of spanking to control undesirable behavior is rather ineffective and may have unforeseen consequences for children's long-term development (Gershoff, 2013).

Another important parenting behavior is parents' regulation of children's television viewing (Christakis, 2009), with extensive viewing (particularly of non-educational programming) being an unproductive use of time that is related to more problematic behavioral and academic outcomes (Hancox, Milne, & Poulton, 2005; Huston, Wright, Marquis, & Green, 1999; Linebarger & Walker, 2005; Mendoza, Zimmerman, & Christakis, 2007). Indeed, one of the most frequently cited reasons that parents report letting their children watch television is to reduce adverse behavior (Radesky, Silverstein, Zuckerman, & Christakis, 2014; Rideout, Foehr, & Roberts, 2010; Thompson, Adair, & Bentley, 2013). If investment is coupled with spanking and extensive television viewing, therefore, it may not be as supportive of children's school readiness as it otherwise would be; in other words, its benefits may be diluted.

This consideration of investment within a constellation of other parenting behaviors is in line with a general approach to capture parenting more holistically, including in the form of multi-dimensional parenting typologies (Cook et al., 2012; Fuligni et al., 2013; Hirsh-Pasek & Burchinal, 2006; McGroder, 2000; Mendez et al., 2009). Thus, we examine an oft-studied parenting behavior—investment—in a relatively new way by linking it to other behaviors that parents may engage in that are relevant to their children's school readiness but that may or may not reinforce investments in this pursuit. In particular, this approach allows us to identify those parents who appear to be "at-risk" in a more generalized way—low levels of investment coupled with high television viewing and frequent use of spanking. The developmental systems perspective (Lerner, 2006) suggests that such a multi-dimensional conception of parenting is also likely to be dynamic. Just because parents engage in one style of parenting when children are quite young does not mean that they will maintain that style as their children grow (Cook et al., 2012; Fuligni et al., 2013; Hirsh-Pasek & Burchinal, 2006).

The first aim of this study, therefore, is to identify a typology of parenting that connects investment with time spent watching television and parents' use of spanking and then, among those who demonstrate concerning behavior (below average investment and above

average television viewing and spanking) when their children are very young, examine whether such parents change their behavior over time. In other words, do parents who demonstrate problematic parenting change in ways to alleviate those concerns over time as their children age?

Considering Child Effects

Any positive changes in parenting behavior—"improvements" in parenting, for lack of a better word—are unlikely to be random. Most attempts to understand factors related to changes in parenting focus on parents themselves or on direct supports for them. For example, raising parents' education, work, and income has implications for their parenting (Dearing et al., 2001; Magnuson, 2007). As another example, several child-focused programs (e.g., Home Visiting, Head Start) have parent support/training components (Ansari & Gershoff, 2015; Brooks-Gunn & Markman, 2005). Notably, despite efforts to improve parenting, some parents demonstrate less positive behavior over time (Cook et al., 2012; Fuligni et al., 2013).

Our systems perspectives points to a different way to understand the potentially dynamic nature of parenting that, early on, seems to be problematic. Because parenting is a transactional system between parents and children, it may change as a function of children eliciting new responses from parents over time (Bell, 1968; Belsky, 1984; Crouter & Booth, 2003; Sameroff & MacKenzie, 2003). Although such child effects are underrepresented in the literature on parenting compared to child outcomes of parenting, there is growing support for children as a passive or active medium of change in parents (Pettit & Arsiwalla, 2008). Much of the "child effects" literature, however, has focused on parents' mental health (Yan & Dix, 2014; Choe, Olson, Sameroff, 2014) and use of corporal punishment (Gershoff et al., 2012). Emerging research does suggest that children's academic and behavioral skills can elicit more educational involvement from parents (Crosnoe et al., 2012; Gershoff, Aber, & Clements, 2009), and there is some indication that these patterns extend to the overall quality of the home environment (Lugo-Gil & Tamis-LeMonda, 2008). Whether such child elicitation applies to changes in parenting over time, especially among parents whose parenting is initially concerning, is less clear.

The second aim of this study, therefore, is to examine whether children appear to elicit positive changes in parents whose engagement (or lack thereof) in a range of parenting strategies during the early years indicated the least support for children's school readiness. The hypothesis is that such parents will change the most when children have, despite their initially problematic parenting, exhibited greater academic (reading) and behavioral skills (Bell, 1968; Crosnoe et al., 2012; Gershoff et al., 2009; Lugo-Gil & Tamis-LeMonda, 2008). We focus on these domains because children who demonstrate greater ability and/or interest in reading may motivate parents to invest more time in their learning (Gershoff et al., 2009), whereas children who demonstrate more behavioral problems may increase parents attempts to adversely control them (Gershoff et al., 2012; Kiff, Lengua, & Zalewski, 2011). Considering that children's skills and behaviors do not occur in isolation, we also hypothesize that these effects will be strongest when children display *both* academic skills

and positive behavior. Essentially, we expect that parents are brought into the fold by their children, who in turn, will benefit themselves in the future.

Exploring Socioeconomic Variability

A key feature of developmental systems is that dynamic reciprocal transactions within families are embedded in broader systems that connect micro- and macro-levels (Lerner, 2006). This framework suggests that macro-level structural systems will shape how the micro-level system of child elicitation plays out, so that it operates differently across diverse segments of the population (Elder, 1999; McLoyd, 1998; Yoshikawa et al., 2012). Family socioeconomic status (SES) offers a compelling example. SES reflects a broad stratification system that divides societies into groups of differential opportunity and cultural socialization that can reproduce social inequality (McLanahan, 2009). Parenting plays a role in this reproduction of inequality. For example, poverty disrupts parenting (Bradley, Corwyn, McAdoo, & Coll, 2001; Mistry et al., 2010), affecting children's educational trajectories and prospects for upward mobility (Gershoff et al., 2007; Yeung et al., 2002). In this way, the consequences of early poverty are lifelong, which is why SES—in general, including poverty—is a common focus of large-scale policies and interventions aiming to support families (Huston et al., 2003).

The potential for family SES—captured here through family income and parent education—to moderate links between child attributes and changes in parenting is rooted in its tendency to signify both financial and social resources for parents and children (Bradley et al., 2001; Yoshikawa et al., 2012). In other words, money, education, and their associated social networks and opportunities enable parents of high SES to access supports for their children and themselves, but they also define the social space in which the ongoing socialization of what it means to be a “good” parent takes place (Lareau, 2004). Today, parents of high SES are more likely to engage in active and strategic forms of parenting that are consciously geared toward supporting school readiness and, importantly, the U.S. educational system tends to mirror and reward this high-SES culture of parenting (Bodovski & Farkas, 2008; Cheadle, 2008; Lareau, 2004).

Given the strength of the socializing messages that parents of high SES receive about the importance of supporting school readiness, they are more likely to follow these parenting strategies across early childhood and may have less potential “room” to be influenced by their children. Those parents of high SES who do not engage in such practices are likely to be highly selective and, as such, less reactive to social influences on parenting overall (Augustine & Crosnoe, 2010; Crosnoe et al., 2012). Consequently, children's elicitation of changes in parenting behavior—especially from an initially problematic point—are likely to be weaker at the high end of the socioeconomic distribution and stronger at the low end. If true, child effects might reduce (or increase, depending on the behavior) socioeconomic disparities in parenting and child outcomes in the long run.

Testing this moderating role of family SES, therefore, is our third aim. The hypothesis is the role of children's behavior and academic skills in eliciting changes in parenting will be less pronounced among families of high SES than among families of low SES.

Method

Data and Sample

ECLS-B (Snow et al., 2009) involves a nationally representative sample of 10,700 children born in the U.S. in 2001 who were followed up from nine months through the end of kindergarten (2006 or 2007). Data were collected in multiple ways, including interviews with parents, caregivers, and teachers and direct assessments of children. We focused on children who entered kindergarten in 2006 in order to maintain equal spacing in parent assessments and because there were changes in the parent questionnaires for children who entered kindergarten in 2007. With these restrictions, the final analytical sample included 6,250 children (sample sizes have been rounded to the nearest 50 per IES/NCES regulations; 49% female; 41% White, 20% Latino/a, 16% African-American, 12% other, 11% Asian American). For descriptive information on the sample, see Table 1 (note that subsamples in Table 1 were created using latent profile analyses that are described below).

Measurement

Parenting—Three sets of parenting practices (investment, television watching, spanking) were measured with variables from parent surveys at ages 2 and 5. Focusing on these two waves allowed us to capture parenting across early childhood; that is, from when children were very young through the transition to school. All measures used in this study have been extensively used in prior research (Cheadle, 2008; Chien & Mistry 2013; Crosnoe, Leventhal, Wirth, Pierce, & Pianta, 2010, Gershoff et al., 2007; Mistry et al., 2010; Yeung et al., 2002) and demonstrated significant intercorrelations (age 2: *r*'s = |.07 - .36|; age 5: *r*'s = |. 09 - .30|).

For investment, parents answered questions in both waves regarding the frequency with which they read books, told stories, discussed books, and sang songs with their children. The items, which had a 4-point scale (1= not at all, 4 = every day), were drawn from the Home Observation for Measurement of the Environment scale (HOME; Caldwell & Bradley, 1984) and summed to measure cognitive stimulation (age 2: M = 11.60, SD = 2.56, α = .60; age 5: M = 11.62, SD = 3.01, α = .68). At age 2, parents reported the number of soft toys (e.g., dolls; 0-7 = 1; 8-15 = 2; 16-25 =3; 26 or greater = 4), push toys (e.g., wagons, trucks; 0-3= 1; 4-5 = 2; 7-10 = 3; 11 or greater = 4), books (0-14 = 1; 15-30 = 2; 31-60 =3; 61 or greater = 4), and CDs (0-2 = 1; 3-5 = 2; 6-12 =3; 13 or greater = 4) they had at home, which were converted into quartiles and summed to measure home resources (M = 9.94, SD = 3.08, α = .63). During the kindergarten year, parents only reported on the number of books they had at home (M = 74.64, SD = 72.57). At age 2, parents also reported whether they had taken their children to a zoo, museum, or story hour and had visited a library (to borrow books or DVDs) that month (0 = no, 1 = yes). Questions were summed to measure extracurricular/cultural activities (M = 1.12, SD = 1.32, α = .61). In the kindergarten wave, parents reported whether their children had participated in athletics, dance, music, drama, art, performing arts, or craft activities outside of school (M = 1.09, SD = 1.30, α = .60). Across both waves, parents also reported how often they allowed television watching among their children (hours during weekdays), which we truncated at eight due to skew (age 2: M = 2.36, SD = 1.98; age 5: M = 1.92, SD = 1.51). Finally, parents reported the number of times

they had spanked their children in the last week (age 2: *M* = .89, *SD* = 1.14; age 5: *M* = .39, *SD* = .79). Due to the skewed nature of parents' responses, we top coded this measure at three.

Children's reading and behavioral skills—During the kindergarten year, reading skills were assessed with a standardized assessment that tapped into letter recognition, early reading, phonological awareness, and knowledge of print (*M* = 39.51, *SD* =15.46; α = .92). We used the IRT-based scores, which allowed for the comparison of assessments regardless of which questions children received and took into account scaling, scoring, and item selection to reduce potential bias. For behavior, parents reported on children's externalizing problems on a five-point scale (0 = never observed, 4= very often observed). Items were drawn from the Preschool and Kindergarten Behavior Scales–Second Edition (PKBS-2; Merrell, 2003) with sample items including: has temper tantrums, destroys things that belong to others, is physically aggressive, gets angry easily, and bothers and annoys other children (*M* = 11.19, *SD* = 3.33, α = .78). Note that these child factors were to be used as predictors of changes in parenting profiles between age 2 and kindergarten. In the analyses reported here, children's scores from the kindergarten wave (the same source of data as the outcomes) were used, but we did run ancillary models with the preschool scores and the residuals scores (i.e., kindergarten scores – preschool scores). In each case, results were the same (available from authors upon request).

Parents' socioeconomic circumstances—To explore population variability, we focused on parents' educational attainment and household income. Parents gave educational histories for themselves and the child's other parent, which we combined to measure highest household education (high school degree or less, some college, bachelor's degree, graduate school). Parents also reported their total household income (the average was approximately $36,000). Ancillary models used per capita income (i.e., income/household size, ~$7,700), and all substantive findings were the same. Models were also estimated using indicators of financial stress and material hardship (e.g., public assistance, food insecurity, residential instability), but little was gained by including these factors in predicting changes in parenting (main effects or interactions).

Covariates—To reduce demographic variability and the possibility of spurious associations, we measured a large number of covariates (see Table 1), including child race, child gender, age of first childcare, age 2 childcare arrangement, preschool attendance, home language, household size, parents' employment status, parents' marital status, mothers' age, urbanicity, and region. Because parents with depression are more likely to spank their children and be less invested (Gershoff et al., 2007) and because their children tend to have more behavioral and academic problems (Yeung et al., 2002), we also measured parents' self-reported mental health via the Center for Epidemiological Studies-Depression Scale (CES-D, α = .88-.91; Radloff, 1977). To account for the possibility that earlier child behavior contributed to changes in parenting, we controlled for children's cognitive functioning and temperament at age 2. Finally, although 98% of parent respondents were biological mothers, with only 4% changing, we controlled for such variability. Unless

otherwise noted (i.e. age 2 childcare, temperament, cognitive functioning), all covariates were drawn from the kindergarten year.

Plan of Analysis

The first aim was to identify different combinations of parental investment, television viewing, and spanking over time in a person-centered analytical approach; specifically, latent profile analyses (LPA) in *Mplus* version 7 (Muthén & Muthén, 2013). To determine the optimal number of profiles, we conducted a series of models that fit one to six parenting profiles to the data. Multiple criteria and fit indices determined the optimal number of profiles, including: (a) the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), and the Adjusted Bayesian Information Criterion (ABIC) where, in each case, lower values indicate better model fit (Nylund, Asparouhov, & Muthén, 2007); (b) the entropy values (ranging from zero-to-one) with values greater than .70 indicating appropriate classification (Jung & Wickrama, 2008); (c) a log-likelihood-based test (Vuong-Lo-Mendell-Rubin), which compares *k* profiles to a model with *k*-1 profiles (i.e. three vs. two profiles; Nylund et al., 2007); and (d) the profile size (at least 1% of the sample and/or an *n* of 25; Jung & Wickrama, 2008). Coupling this information with our theoretically grounded conceptualization of parenting strengthened the reliability of profile identification (Muthén, 2003). Finally, considering problems with model identification and to avoid local maxima, we increased the number of random starts, which ensured a correct profile solution at a global rather than local level.

The next two aims concerned the transition of parents from problematic parenting profiles when children were young into more positive profiles as children transitioned into school. We focused on parents whose behavior at the age 2 wave suggested that their parenting was problematic (e.g., low investment and high television viewing and spanking). In this subsample, we predicted the kindergarten year parenting profiles using the measures of children's academic skills and behavioral problems (including the interaction between the two) and the full set of covariates. The purpose of these analyses was to examine the potential existence of child elicitation of parenting changes—whether “improvements” in parenting could reflect the skills and behavior of the children being parented. Finally, we estimated interactions between the focal child factors and the measures of parents’ socioeconomic circumstances to assess the possibility that such child elicitation of more positive parenting might be more common in more disadvantaged segments of the population.

To ensure that all cases were retained, missing data (~10%) were addressed using full information maximum likelihood estimation. All models also incorporated: 1) sampling weights to ensure that our sample was representative of the larger population of children and families (including correcting for non-random attrition across waves) and 2) stratification and clustering variables to properly estimate standard errors in the face of a clustered sampling frame.

Results

Parenting Profiles during Early Childhood

As a starting point, our first aim was to capture the most common configurations of parental investment, television watching, and spanking during early childhood. We were particularly interested in parents whose parenting behavior seemed problematic (i.e., low investment coupled with above average television viewing and spanking) when children were young and, therefore, had more room to make positive parenting changes as children aged.

According to the statistics in Table 2, the five-solution model fit the data best at age 2. The AIC, BIC, and ABIC all declined from the four- to five-solution models. The entropy statistic remained the same but, importantly, exceeded recommendations in the literature (Jung & Wickrama, 2008). The Lo-Mendell-Rubin Adjusted Test (LRT) also indicated that the five-profile model fit better than the four-profile model. Finally, the smallest profile comprised 3% of the sample, and each profile was theoretically distinct. In all cases, the profile probabilities were above 80%, indicating that parents were likely assigned to the correct profile. Thus, based on converging theoretical and statistical evidence, we settled on the five-profile model. Each was labeled according to the relative scores on the parenting measures.

As seen in the top panel of Figure 1, one group consistently coupled low investment with spanking and scored above average on television viewing. This profile comprised 25% of the sample, which is similar to past studies of supportive parenting (Cook et al., 2012; Fuligni et al., 2013). We labeled this group as *"at-risk" parents* because their values on each of the parenting factors were in line with past evidence about risk factors for child maladjustment (Gershoff et al., 2012; Mendoza et al., 2007; Mistry et al., 2010; Yeung et al., 2002;). Given these multiple risks, such parents became the focal subsample for the remaining analyses. Notably, compared to the full sample of families, these "at-risk" parents were more likely to be low SES, African Americans, living in non-urbanized cities in the South, and non-immigrants. They also exhibited more depressive symptoms and were more likely to have boys (see Table 1). Finally, children of "at-risk" parents exhibited a combination of the lowest functioning (cognitive and behavior) at age 2, and, thus, from a demographic standpoint, these parents and children were "at-risk".

Although the remaining age 2 profiles were not used in subsequent analyses, we describe them as context for the study findings (see Table 1 for descriptive information for the remaining profiles). The next profile (14%) had high levels of investment and low use of spanking. These parents were labeled *high investors.* The majority (55%) reported slightly below average levels on all parenting practices and were classified as *average investors*. A fourth group of parents (3%) was distinguished by high levels of television time. This group was labeled as *television-focused.* Finally, 3% reported both high levels of investment and spanking behaviors, and they were labeled as *high investors and frequent spankers.*

Comparing the "at-risk" parents to the average investors (the profiles that most closely resembled it) revealed important differences that cut across the various parenting behaviors. To begin, the "at-risk" parents scored roughly 8% of a standard deviation lower on all

investment behaviors than the average investors. Furthermore, they scored higher on both television watching (24% of a standard deviation) and spanking (2 standard deviations). These differences were further magnified when comparing “at-risk” parents to the full sample of children and families. This converging evidence clearly indicates that these parents in the ECLS-B best match our theoretical conception of problematic parenting (Gershoff et al., 2007, 2012; Mistry et al., 2010; Yeung et al., 2002).

The same LPA was conducted for the measures of parental investment, television watching, and spanking from the kindergarten wave. We should point out that the outcomes of these kindergarten analyses were not predicated on parents’ profile assignment during the age 2 wave; that is, we created the kindergarten profiles with the full sample of children and families. We did so because we wanted to see how “at-risk” parents compared to the full population of parents, rather than their at-risk peers. Results from these analyses revealed that the AIC, BIC, and ABIC all declined from the four- to five-solution models, and the entropy statistic was above recommended levels (Table 2). The LRT test revealed a marginal improvement between the three- and four-profile model, and no improvement between the four- and five-profile models. We focused on the five-solution model, however, because it was theoretically distinguishable and most closely resembled the parenting profiles from age 2. All five profiles were considered in the multinomial logistic regressions for the second and third research aims.

The bottom panel of Figure 1 displays the mean z-scores for each parenting profile at the kindergarten wave. Some parents (11%) reported low investment and frequent spanking. They were considered to be the least supportive of children's school readiness. These parents were labeled *“at-risk”* and served as the referent in the focal analyses. A second group (10%) reported high levels of investment-behaviors and low levels of spanking and were labeled *high investors.* The majority (63%) reported average investment type behaviors and low use of spanking and were labeled as *average investors.* Similar to parenting profiles at age 2, a fourth group of parents (2%) consistently reported high levels of television viewing and low investment. It was labeled *television-focused.* Finally, a fifth group (14%) reported below average investment coupled with moderately high spanking practices. We labeled them as *moderate spankers.*

Given our interest in changes in parenting across early childhood, we conducted cross-tabulation analyses to capture the basic patterns of change among the parenting profiles across the two waves, which provided a more comprehensive picture of the specific parenting changes. As shown in Table 3, there were 25 possible transitions.

As for changes in parenting in the focal group of “at-risk” parents, Table 3 shows that two groups of parents demonstrated relatively stable parenting practices: 21% of parents exhibited slight improvements in their use of spanking over time, whereas 23% of parents demonstrated somewhat less supportive behaviors, especially in terms of spanking (this latter group served as the referent). Two groups of parents also demonstrated more positive changes in their parenting practices: one (5%) exhibited above average investment behaviors and low use of spanking whereas the second (49%) demonstrated average investment

behaviors and low use of spanking. A final group (2%) exhibited stable investment practices but reduced their use of spanking and, instead, increased their children's television time.

Child Elicitation of Changes in Parenting

Turning to the second aim of this study, multinomial logistic regressions identified the factors that predicted the kindergarten-year profiles among parents who, during the age 2 wave, had the most problematic parenting profile. In particular, we wanted to assess the degree to which child factors would predict changes in parenting over time (for results, see Table 4). Note that, in addition to odds ratios, we provided standardized regression coefficients (i.e., effect sizes), allowing for a direct comparison of the "child effects" to those of income and education within each profile. Finally, because odds ratios correspond to the effect of a one-unit change in the predictor (Tabachnick & Fidell, 2001), we also provide an estimate that corresponds to parents' likelihood of transitioning into the different kindergarten profiles at different levels of "child effects"; specifically, we provide estimates that correspond to a one standard deviation difference in children's reading and/or behavioral skills.

According to Model 1, which included only main effects of the focal variables (shown) and the covariates (not shown), children's reading skills and behavior problems both predicted transitions of the parents in the "at-risk" profile when children were 2 into other profiles when children entered kindergarten. Specifically, parents had higher odds of transitioning into the high investors profile (the profile theoretically linked to school readiness) when their children had more developed reading skills ($OR = 1.04$, $p < .05$), but had lower odds of making this transition when their children had more behavioral problems ($OR = .80$, $p < .01$). Thus, parents of children who demonstrated strong reading skills were approximately 57% more likely to transition into the high investors profile as compared to parents of children with average reading skills. In contrast, parents of children who exhibited high behavior problems were roughly 66% less likely to make this transition as compared to children with average behavior problems. Similarly, the transition into the kindergarten profile characterized by average investment and low spanking (average investors) was also associated with having children with more developed reading skills ($OR = 1.02$, 31%, $p < .05$) and better behavior ($OR = .92$, 27%, $p < .01$).

Children's behaviors, but not reading skills, predicted two other kindergarten year parenting transitions. Better-behaved children were less likely to have parents remain in the "at-risk" profile ($OR = .94$, 22%, $p < .05$). In other words, the focal difference between parents who remained in the "poor" profile and those who demonstrated reductions in spanking (moderate spankers) were driven by children's own behavioral skills (or lack thereof). Finally, poorly behaved children were less likely to have parents enter the television-focused category ($OR = .88$, 40%, $p < .05$). Although not shown, none of the covariates consistently predicted positive changes in the parenting profiles.

Concluding that child factors elicited changes in parents is difficult because parenting behaviors could have changed first and influenced child outcomes. To address this possibility, we estimated models with earlier parental behavior (those used in our profiles) as a predictor of children's reading skills and behavior problems. In other words, we

modeled the influence of earlier parenting on child outcomes to take into account the dynamic and reciprocal family system. We also modeled children's academic and behavioral skills as the developmental residuals not predicted by earlier parenting and then used them to predict parenting transitions. Thus, in both cases, we take into account the dynamic nature of the family system. Even when taking into account the reciprocal relations between parents and their children, children's reading skills and behavior (net of the influence of earlier parenting) continued to predict changes in parenting behavior, lending confidence to our general conclusions.

In sum, results suggested that changes in parenting from a more problematic profile towards more support for school readiness were most likely to occur among parents whose children were already demonstrating pre-academic skills and positive behavior. Recognizing that these two child factors were not isolated from each other, an additional analysis (see Interaction Model 2 in Table 4) interacted them (referent: “at-risk” parents). This interaction was significant for three of the parenting profiles: high investors (OR = .99, p < .05), average investors (OR = .99, p < .001), and television focused (OR = .99, p < .05). We interpreted these interactions by calculating predicted probabilities of profiles transitions for different combinations of children's reading skills (one standard deviation above and below the mean) and behavior problems (one standard deviation above and below the mean). We summarize these patterns below.

To begin, children with fewer behavior problems and better reading skills were most likely to have parents move from the “at-risk” profile into the high investors profile (predicted probability = .67), whereas the other combinations of reading and behavior problems yielded predicted probabilities ranging from .13 to .26. Children with fewer behavior problems and better reading skills were also more likely to have parents move into the average investors profile (high reading and low behavior problems = .87). When children had more behavior problems, however, the links between their reading skills and their parents’ transitions into the average investors profiles were weaker (high reading and high behavior problems = .61). Finally, parents were more likely to transition from the “at-risk” profile into the television-focused profile when children had less developed reading skills, regardless of behavior problems (predicted probabilities = .28-.36), but they were less likely to make this transition when children displayed strong reading skills coupled with higher behavior problems (high reading and high behavior problems = .05). Thus, for the most part, children's reading skills tended to elicit positive changes in parenting over time but less so when accompanied by behavioral difficulties.

Parents’ Socioeconomic Circumstances and Children's Elicitation of Parenting

The third research aim concerned socioeconomic variability in the association between children's academic and behavioral skills and changes in their parents’ support of school readiness. According to Model 1 in Table 4, neither parental factor significantly predicted parenting profiles during the kindergarten wave among the focal “at-risk” parents. Although parent education did not moderate child elicitation (results available upon request), family income (Models 3-4) did moderate two of the previously observed associations for the high (OR = 1.01, p < .01) and average (OR = 1.01, p < .05) investors profiles.

Specifically, children's reading skills were more likely to predict movement of parents from the “at-risk” profile into both the high and average investors profiles within families of higher SES, and this was especially true at higher levels of reading skills (high investors [low reading and high SES = .18; high reading and high SES = .53]; average investors [low reading and high SES = .59; high reading and high SES = .81]). In contrast, parents of lower SES were less reactive to their children's abilities (high investors [low reading and low SES = .29; high reading and low SES = .18]; average investors [low reading and low SES = .64; high reading and low SES = .67]). In sum, contrary to our hypotheses, child elicitation appeared to be primarily at work at the higher end of the income distribution but did not vary, net of family income, by parents’ education.

Discussion

The idea that parents play a central role in shaping their children's educational trajectories is not new (Huston & Bentley, 2010), nor is the recognition that parents can support (or undermine) children's development through their investment practices, use of the television, and spanking (Gershoff et al., 2007; Yeung et al., 2002; Mendoza et al., 2007). The parenting literature, however, has often examined these practices in isolation and as more static than they probably are. Guided by the developmental systems perspective (Lerner, 2006), this study utilized LPA to examine a more dynamic and holistic conception of parenting, with a particular focus on parents whose parenting behavior appeared to be less engaged and high in spanking during the early years of their children's lives (Fuligni et al., 2013; Landry et al., 2001). As a particularly novel take on parenting, we also examined whether dynamic changes in parents’ support for school readiness—broadly defined—reflected a synergy between their children's elicitation of parenting responses from them (Bell, 1968) and their own socioeconomic circumstances (Crosnoe et al., 2012). What we found has three basic take-home messages.

First, parenting behaviors relevant to children's school readiness clustered together in different ways that get at the overall ecology of the home. In a national sample, there were five distinct profiles of parents’ support for school readiness: average investors, high investors, television-focused, “at-risk”, and high investors and frequent spankers (or moderate spankers at kindergarten). The normative experience for most children (55-63%, depending on wave) was to have parents who were average-investors. More importantly, low, average, and high investment—a gradient often considered by researchers to be important in its own right (Foster, 2002)—went along with other family processes that qualified their relevance to school readiness. Indeed, parenting is complex, and single dimensions may not capture how parenting occurs in reality (Cook et al., 2012; Fuligni et al., 2013; McGroder, 2000; Mendez et al., 2009). Person-centered modeling (like LPA), therefore, can shed new light on the dynamic nature of parenting.

Second, parents’ support for school readiness evolved as children grew. Promisingly, even parents who were characterized by below average investment, above average television viewing, and more frequent use of spanking changed their parenting in ways that provided more support for their children's school readiness. Among these “at-risk” parents, 5% were eventually considered to be in the kindergarten parenting profile that was most aligned with

research evidence on healthy development. These shifts in parenting were not random. Rather, in line with past research on “child effects” (Bell, 1968; Crosnoe et al., 2012; Lugo-Gil & Tamis-LeMonda, 2008), we found that some children elicited improvements in parenting. Specifically, children who demonstrated greater pre-academic (reading) skills and positive behavior (and especially pre-academic skills in the context of positive behavior) were more likely to have parents change toward the profiles characterized by more support for school readiness.

Why might children's reading skills and behavior elicit positive changes in parenting? This is because children's early skills and behavior evoke different responses in parents and orients them toward participating and managing children's activities and experiences. For example, children who demonstrate stronger reading skills may be more likely to engage in activities that require more participation and active management by parents, resulting in more engaged parenting over time (Lugo-Gil & Tamis-LeMonda, 2008). Children's negative behaviors, however, may increase parents’ attempts to control behavior using more punitive methods (Kiff et al., 2011). Thus, developmental research must not only examine the influence of parents on children, but also of children on their parents. These findings are important for both research and policy especially in light of growing investments in two-generation interventions (e.g. Head Start, Home Visiting; Chase-Lansdale & Brooks-Gunn, 2014). Although two-generation programs might not always be successful in directly improving parenting, indirect pathways of treatment effects could still be a possibility. Our findings support these latter assertions and identify one indirect avenue, children's early academic and behavioral skills, that can be used to facilitate improvements in parenting over time.

Third, contrary to expectations, children from socioeconomically advantaged families were more likely to elicit changes in their parenting behaviors than children from more disadvantaged homes. In other words, children's elicitation further fueled the differences between families of middle class and lower-income backgrounds (i.e. cumulative advantage; Ceci & Papierno, 2005), thereby reproducing inequality and affecting children's educational prospects (Gershoff et al., 2007 Mistry et al., 2010). One possible explanation for these findings is that the greater obstacles that low-income parents face (e.g., worse neighborhoods, limited resources, multiple jobs or non-jobs; Dunifon, Kalil, Crosby, & Su, 2013) may interfere with their quality one-on-one time with their children, so that they have less opportunity to be affected by their children's early academic and behavioral skills. For example, parents from disadvantaged families who follow more unpredictable and non-standard work schedules often have less time to spend with their children (Dunifon, Kalil, & Bajracharya, 2005). Another possibility is that parents from low-income communities may be less aware of the importance of supporting their children's school readiness or the most efficient or age-appropriate ways in which to support their children's learning, so that their children's skills do less to influence them (Kalil et al., 2012). Nevertheless, our results suggest that intervention programs that aim to use children's skills as vehicle for improve parenting, may need to consider supplementing family earnings in conjunction with parent and child services for the most optimal outcomes. Even so, the majority of parents were in the average investors profile over time and, thus, may not have needed intensive

intervention; rather, for these parents, less intensive measures may be more appropriate to increase their knowledge about positive forms of parenting.

Of course, these findings need to be interpreted in light of the limitations, three of which reflected the depth of measurement available. Although the ECLS-B afforded the opportunity to examine these processes in a nationally representative sample, a definite strength of the study, the measures were limited relative to many community-based studies of parenting. For example, information on television viewing behaviors only examined dosage and not programming (Huston et al., 2003), and we did not have information on positive discipline practices (Choe, et al., 2014). Future work would benefit from stronger measurement and consideration of a broader set of parenting practices, which may be more feasible in other datasets. For example, using data of parents' time use could provide interesting insight into family dynamics (Crosnoe & Trinitapoli, 2008). It should also be kept in mind that our measures of cognitive stimulation and extracurricular activities had low reliability, in part, because they consisted of only a few items. Thus, the size of the "child effects" on parenting is a conservative estimate and should be interpreted with caution. If these findings are replicated with stronger measures of parenting, then we can draw stronger conclusions about the role of child effects in developmental research.

Furthermore, although we controlled for a robust set of child and family covariates, other aspects of children's lives could be driving these findings. For these reasons, future research needs to consider other aspects and characteristics of children that might facilitate parental engagement. We should also note that the parents in ECLS-B were predominately mothers; therefore, how fathers support their children's school readiness remains unclear and needs to be considered in future research because there might be dyad-specific patterns that emerge (Pettit & Arsiwalla, 2008). For example, it might be that children's behavior problems have a stronger impact on fathers' reactivity than mothers and, thus, examining mothers' practices provides an incomplete understanding of child effects. Future research also needs to directly link changes in parenting during early childhood to child outcomes (not just child effects on these changes), which we could not examine with the current data. These findings should also be replicated with other age groups. We would expect that "child effects" would similarly influence parenting behaviors across developmental stages, but the magnitude of these links—and their socioeconomic variation—may vary in the life course. Additionally, although our parenting profiles fit the data well, some of the transitions over time had small sample sizes. For example, although "television-focused" parents and "high investment and high discipline" parents represented an important percentage of the overall population, there was not a sufficient number of them to look at the various transitions over time. Thus, continued work is necessary in understanding the transitions among the profiles that emerged less frequently.

Finally, we only examined parents' socioeconomic circumstances as a moderating factor, which provided important insight into the variability of child effects across the income distribution, but neglected other ways that child effects on changes in parenting may vary according to the personal characteristics of parents or the contexts in which they live their lives (Brooks-Gunn & Markman, 2005). We did so because much of the literature suggests that socioeconomic factors tend to be the underlying factor driving the differences in family

investment (Magnuson, 2007; McLanahan, 2009; Mistry et al., 2010; Raver, Gershoff, & Aber, 2007). Many of these other contextual factors, such as culture and immigration, are closely related to socioeconomic status, but they likely have added effects. Unfortunately, due to small sample size, it was not feasible to examine these other contextual factors that might affect these child elicitation processes. For these reasons, future research needs to pay closer attention to the role of other macro-level institutions that will allow for a more in depth understanding of how child effects might operate across diverse segments of the population.

Despite these limitations, the study leveraged developmental systems perspective (Lerner, 2006) in key ways to provide new insight into how children influence their parents over time. Although we cannot make casual inferences from these findings, they do suggest that children actively create their own ecologies and that their early academic and behavioral skills can be leveraged to change the parenting that they receive. This possibility is particularly promising when considering that roughly half of the parents who were considered to be “at-risk” during the early years demonstrated some improvements in their parenting practices through the transition to school, with 5% of parents changing between the two extremes on the parenting typology.

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Highlights

- We examine different typologies of parenting across the early years (ages 2 and 5)
- Roughly half of the “at-risk” parents exhibited improvements in parenting
- Improvements in parenting were elicited by children's reading and behavior skills
- These “child effect” patterns were stronger among higher-income families

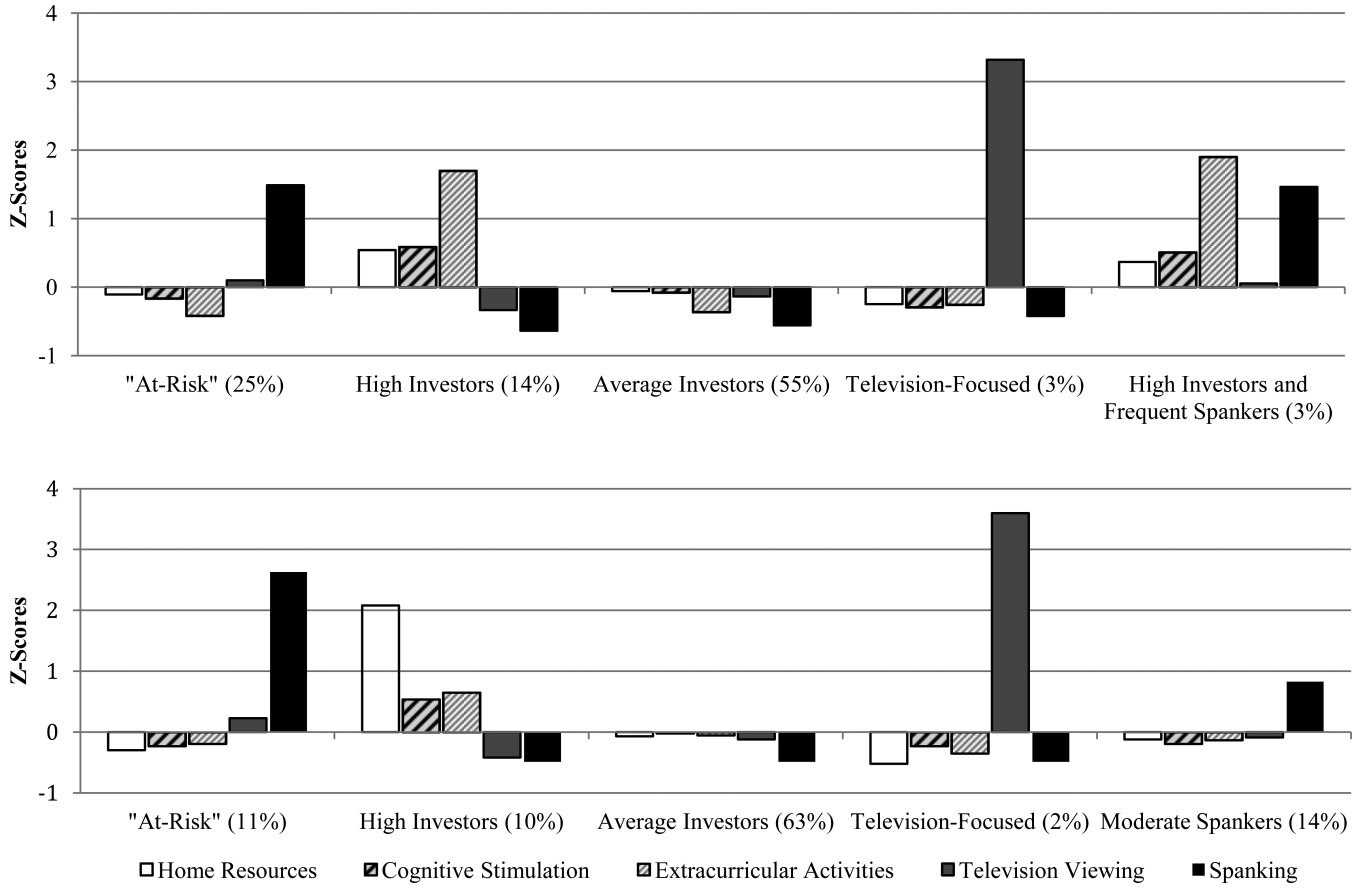

Figure 1.

Standardized mean scores for the parenting practices for each of the age 2 (top half) and kindergarten (bottom half) parenting profiles.

Table 1

Descriptive statistics for the full sample and age 2 profiles.

	Percent or Mean (Standard Deviation)						Test for Sig. Diff
	Full Sample	**"At Risk" Sample**	**High Investors**	**Average Investors**	**Television Focused**	**High Inv. Freq. Spank.**	
Child race/ethnicity							***
White	41.4	38.7	47.3	42.0	24.2	43.8	
African-American	15.8	26.5	8.1	12.5	20.8	18.8	
Latino/a	20.0	16.4	14.0	22.7	37.1	11.5	
Asian-American	10.8	4.9	21.2	10.5	11.8	14.9	
Other race/ethnicity	12.0	13.5	9.4	12.3	6.2	11.0	
Gender (female)	49.4	44.1	50.5	51.6	53.4	44.7	***
Age of first non-parental care	5.38 (5.29)	5.50 (5.46)	5.41 (5.41)	5.37 (5.21)	4.36 (4.05)	5.35 (5.69)	*ns*
Childcare at age 2							***
Parental care	60.0	59.7	65.3	56.7	75.0	63.8	
Relative care	15.2	17.2	11.8	16.1	14.3	10.2	
Non-relative care	11.5	9.9	9.8	13.3	7.8	9.6	
Center-based care	13.3	13.2	13.1	13.9	2.9	16.4	
Temperament (age 2)	10.62 (4.55)	12.11 (4.43)	9.58 (4.31)	10.19 (4.54)	10.60 (4.15)	10.88 (4.34)	***
Cognitive skills/10 (age 2)	12.57 (1.08)	12.44 (1.03)	13.00 (1.07)	12.53 (1.08)	12.34 (1.13)	12.73 (1.06)	***
Preschool enrollment (age 4)	61.7	56.4	71.4	61.8	57.9	66.3	***
Immigrant parent	26.6	15.1	33.4	29.7	38.8	25.0	***
Parents' marital status							***
Married	68.4	58.7	83.1	69.4	60.6	70.7	
Separated/divorced	10.1	11.0	6.5	10.4	9.1	11.3	
Single	19.1	27.1	9.2	17.7	28.6	15.6	
Non-biological	2.4	3.2	1.2	2.5	1.7	2.4	
Parents' depressive sympt.	4.97 (5.64)	5.84 (5.99)	4.10 (5.03)	4.74 (5.53)	5.95 (6.78)	4.85 (5.04)	***
Parents' highest education							***
Less than high school	8.8	10.5	3.3	9.3	17.4	3.4	
High school or equivalent	23.2	32.3	9.8	21.9	38.2	17.4	
Some college	29.8	33.5	17.7	31.2	22.5	33.5	
Bachelors	18.7	15.8	25.1	18.7	11.8	19.3	
Graduate school	19.5	7.9	44.1	18.9	10.1	26.4	
Mothers' employment status							***
Full time	44.7	46.1	36.9	46.1	42.1	42.8	
Part time	19.1	16.6	23.4	19.0	14.0	24.5	
Unemployed	36.2	37.3	39.7	34.9	43.9	32.7	
Mothers' age	33.80 (6.99)	31.50 (7.04)	36.03 (6.17)	34.37 (6.94)	32.31 (6.36)	33.97 (6.60)	***
Home language (English)	79.5	88.3	75.8	77.0	65.2	84.6	***
Household income	8.18 (3.43)	7.11 (3.36)	9.76 (2.98)	8.31 (3.41)	6.85 (3.46)	8.79 (3.05)	***

	Percent or Mean (Standard Deviation)						Test for Sig. Diff
	Full Sample	**"At Risk" Sample**	**High Investors**	**Average Investors**	**Television Focused**	**High Inv. Freq. Spank.**	
Household size	4.67 (1.43)	4.64 (1.53)	4.62 (1.21)	4.70 (1.43)	4.74 (1.54)	4.51 (1.46)	*ns*
Region							***
Northeast	13.4	7.6	16.8	15.4	13.5	11.1	
Midwest	23.7	21.6	25.9	24.7	18.5	18.3	
West	26.5	20.7	30.9	27.5	40.4	24.5	
South	36.4	50.1	26.4	32.4	27.6	46.1	
Urbanicity							***
Urbanized areas	70.2	61.9	83.1	70.1	84.2	70.9	
Rural	17.0	23.8	9.4	16.4	8.2	14.6	
Urban clusters	12.8	14.3	7.5	13.5	7.6	14.5	

Note. Unless otherwise noted, all variables were from the kindergarten wave.

*** $p < .001$.

ns = not significant.

Table 2

Comparison of model fit for different profile solutions for parenting factors (n = 6,250)

	Profile Solutions					
	1	**2**	**3**	**4**	**5**	**6**
Age 2						
AIC	126322.65	121402.65	119516.95	118350.44	117015.92	116256.07
BIC	126391.14	121512.24	119667.63	118542.23	117248.80	116530.05
Adj. BIC	126359.37	121461.40	119597.72	118453.25	117140.75	116402.94
Entropy	-	.990	.992	.940	.940	.940
LRT *p* value	-	.00	.00	.01	.01	.09
% Profile 1	1.00	.72	.16	.25	.55	.56
% Profile 2	-	.28	.55	.03	.14	.02
% Profile 3	-	-	.28	.14	.03	.03
% Profile 4	-	-	-	.58	.25	.23
% Profile 5	-	-	-	-	.03	.03
% Profile 6	-	-	-	-	-	.13
Kindergarten						
AIC	176663.43	171038.77	163849.33	161382.29	159857.83	158846.40
BIC	176731.92	171148.35	164000.01	161574.07	160090.70	159120.37
Adj. BIC	176700.14	171097.51	163930.10	161485.09	159982.66	158993.26
Entropy	-	.996	.999	.966	.963	.929
LRT *p* value	-	.00	.00	.06	.20	.30
% Profile 1	1.00	.90	.10	.14	.14	.55
% Profile 2	-	.10	.76	.11	.63	.14
% Profile 3	-	-	.14	.65	.02	.09
% Profile 4	-	-	-	.10	.11	.10
% Profile 5	-	-	-	-	.10	.10
% Profile 6	-	-	-	-	-	.02

Note. AIC = Akaike Information Criterion. BIC = Bayesian Information Criterion. LRT = Lo-Mendell-Rubin Adjusted Test.

Table 3

Latent profiles of parenting across the early years of childhood

		Kindergarten Wave Parenting Profiles					
		"At-Risk" (*n* = 700)	**High Investors (*n* = 650)**	**Average I nvestors (*n* = 3,900)**	**Television-Focused (*n* = 150)**	**Moderate Spankers (*n* = 850)**	**Overall (*n* = 6,250)**
Age 2 Parenting Profiles	"At-Risk" (*n* = 1,550)	23%	5%	49%	2%	21%	100%
	High Investors (*n* = 850)	3%	23%	64%	1%	9%	100%
	Average Investors (*n* = 3,450)	6%	11%	70%	2%	11%	100%
	Television-Focused (*n* = 200)	6%	2%	69%	9%	14%	100%
	High Investors & Frequent Spankers (*n* = 200)	18%	13%	51%	0%	18%	100%

Table 4

Selected Results from Multinomial Logistic Regressions of Kindergarten Wave Parenting Profiles (n = 1,550)

	High Investors			Average Investors			Television-Focused			Moderate Spankers		
	B (SE)	***β***	***OR***	**B (SE)**	***β***	***OR***	**B (SE)**	***β***	***OR***	**B (SE)**	***β***	***OR***
Main Effects Model 1												
Reading Skills	.036 (.016)*	.17	1.04	.021 (.009)*	.31	1.02	−.029 (.023)	−.09	.97	.013 (.010)	.22	1.01
Behavior Problems	−.219 (.077)**	−.25	.80	−.088 (.030)**	−.32	.92	−.128 (.062)*	−.10	.88	−.067 (.028)*	−.26	.94
Income	.079 (.080)	.09	1.08	.036 (.051)	.13	1.04	.097 (.083)	.07	1.10	.066 (.050)	.25	1.07
Education	.439 (.241)	.16	1.55	.113 (.158)	.13	1.12	.263 (.387)	.06	1.30	.149 (.162)	.18	1.16
Interaction Model 2												
Reading Skills	.035 (.017)*	.17	1.04	.023 (.009)*	.31	1.02	−.035 (.027)	−.11	.97	.017 (.010)	.26	1.02
Behavior Problems	−.243 (.080)**	−.28	.78	−.118 (.032)***	−.38	.89	−.206 (.082)*	−.15	.81	−.086 (.029)**	−.32	.92
Reading × Behavior	−.008 (.004)*	−.12	.99	−.007 (.002)***	−.34	.99	−.011 (.005)*	−.12	.99	−.001 (.002)	−.07	1.00
Interaction Model 3												
Reading	.018 (.018)	.09	1.02	.022 (.009)*	.32	1.02	−.028 (.024)	−.09	.97	.015 (.010)	.25	1.02
Income	.079 (.077)	.09	1.08	.043 (.050)	.14	1.04	.088 (.080)	.07	1.09	.072 (.048)	.27	1.08
Income × Reading	.012 (.005)**	.19	1.01	.005 (.002)*	.23	1.01	−.002 (.007)	−.02	1.00	.001 (.003)	.05	1.00
Interaction Model 4												
Behavior Problems	−.188 (.088)*	−.22	.83	−.095 (.031)**	−.34	.91	−.145 (.073)*	−.11	.87	−.075 (.028)**	−.29	.93
Income	.050 (.076)	.06	1.05	.039 (.051)	.14	1.04	.099 (.083)	.07	1.10	.069 (.049)	.26	1.07
Income × Behavior	−.028 (.022)	−.12	.97	−.006 (.007)	−.07	.99	−.012 (.028)	−.03	.99	−.007 (.009)	−.09	.99

Note. "At-risk" was the referent. *OR* = odds ratio.

*** $p < .001$.

** $p < .01$.

* $p < .05$.