



Published in final edited form as:

Child Dev. 2015 July ; 86(4): 1210–1226. doi:10.1111/cdev.12374.

Adverse Consequences of School Mobility for Children in Foster Care: A Prospective Longitudinal Study

Katherine C. Pears,
Oregon Social Learning Center

Hyouon K. Kim,
Oregon Social Learning Center

Rohanna Buchanan, and
Oregon Social Learning Center

Philip A. Fisher
University of Oregon

Abstract

Few prospective studies have examined school mobility in children in foster care. This study described the school moves of 86 such children and 55 community comparison children (primarily Caucasian), living in a medium-sized metropolitan area in the Pacific Northwest who were approximately 3–6-years-old at the study start. Additionally, the effects of moves from kindergarten through Grade 2 on academic and social emotional competence in Grades 3 through 5 were examined. A greater number of early school moves was associated with poorer later social emotional competence and partially mediated the effects of maltreatment and out-of-home placement on social emotional competence. This was only the case for children with poorer early learning skills in kindergarten. Implications for preventive intervention are discussed.

Keywords

school mobility; foster care; maltreatment; school readiness; school adjustment

Early childhood experiences, particularly adverse circumstances such as placement in foster care and the maltreatment that often precedes such placement, have far-reaching impacts on a number of facets of children's lives, including behavioral, psychosocial, and educational outcomes (Shonkoff et al., 2012). When early childhood adversity negatively impacts school adjustment, the risks of academic failure, special education placement, and dropout increase. Children in foster care have a more difficult time in school than their peers, tending to experience higher rates of placement in special education, more suspensions and expulsions, lower achievement, and less likelihood of high school graduation (Blome, 1997; Pears, Fisher, Bruce, Kim, & Yoerger, 2010; Zima et al., 2000). In order to intervene in the pathway from early adversity to poor school adjustment, it is important to elucidate the

underlying mechanisms through which these children's experiences of adversity might affect school adjustment and to delineate those mechanisms as early in the children's school careers as possible. Such mechanisms have the potential to serve as targets for intervention and prevention programs. It is equally important to understand whether some factors differentially affect or moderate the effects of early adversity for subgroups of children in order to target those most in need of intervention.

School mobility--moving from one school to another when this is not dictated by a typical transition point (i.e., change from elementary to middle school)--has been cited as a possible factor in foster children's poor school outcomes (Ferguson & Wolkow, 2012; Sullivan, Jones, & Mathiesen, 2010). However, studies have rarely focused either on describing these school moves (e.g., type, timing) or on specifying whether the frequency of moves might mediate the path between early adversity and later school adjustment. Similarly, it is not known if some children are more vulnerable to effects of school mobility. A better understanding of school moves for children in foster care could aid both policymakers and practitioners in intervening to ameliorate their negative effects.

Early Adversity and School Outcomes

As is noted above, children in foster care tend to fare quite poorly in school. Early life adversity such as maltreatment, harsh parenting, and living in poverty—all common experiences among foster children—has been linked to poorer school functioning in the first several years of school (Grades K–2; Fantuzzo & Perlman, 2007; Pears et al., 2010), suggesting that trajectories of poor school functioning start at an early age. A rich literature has shown that a child's academic skills and behaviors at the beginning of elementary school may have long-reaching effects on their later outcomes, including academic achievement throughout elementary, middle and high school, graduation and occupational attainment as well as behavioral outcomes such as substance use (e.g., Duncan et al., 2007; Fothergill et al., 2008; McClelland, Acock, Piccinin, Rhea, & Stallings, 2013). Thus, examining the early elementary school mechanisms through which maltreatment and placement in foster care might affect school outcomes could help in the design of programs to prevent long-term negative academic and behavioral trajectories. It should be noted that maltreatment and foster care are considered together here as all of the children in this study had histories of both foster care and maltreatment, distinguishing them from children in foster care who have come into care due to family circumstances other than maltreatment.

School Mobility and School Outcomes

Decades of research have shown that school mobility has negative effects on children in the general population (Grigg, 2012; Herbers et al., 2012; Mehana & Reynolds, 2004). While in the process of moving and during the period of adjustment to a new school, children may miss out on instruction, causing them to fall behind their non-mobile peers. For example, Mehana and Reynolds (2004) found in their meta-analysis that mobile students were about 4 months behind their peers in reading and math achievement. Once in the new school, it may take teachers time to establish the correct placement for the student, leading to more time being spent without appropriate instruction. In particular, lack of records may interfere with

teachers' abilities to provide students with the appropriate level of instruction and services (Grigg, 2012). Finally, school mobility might affect outcomes through the disruption of social relationships (Sullivan et al., 2010). Children establishing new ties with both peers and adults at their new school might become distracted from academics.

Given that they may change caregivers frequently, children in foster care might be expected to have a high rate of school moves. In fact, a number of researchers have cited school mobility as a primary reason for the poor school performance of children in foster care (Conger & Finkelstein, 2003; Ferguson & Wolkow, 2012; Ward, 2009). However, the role of school moves in poor school outcomes for foster children is not at present firmly established empirically; most studies of school transitions in children in foster care have been based either on small samples with retrospective, self-report data or have relied on district-level records which may only follow children's transitions as they travel within a district, leading to under-estimation of moves (Conger & Finkelstein, 2003; Voight, Shinn, & Nation, 2012). It is also not clear whether school mobility per se leads to poor school outcomes or whether there might be a third factor, such as the well-documented behavior problems shown by many children in foster care, contributing both to school mobility and to poor outcomes. Finally, as children in foster care represent an extremely heterogeneous population in terms of behaviors and skills, (Rees, 2013) it seems worth exploring whether some of these children might be more vulnerable to the effects of school mobility than others. Overall, much is still unknown about the school moves of children in foster care, making it difficult to know how to best prevent or ameliorate negative effects.

Characteristics of School Moves for Children in Foster Care

A basic understanding of the characteristics of school moves for children in foster care (e.g., the frequency with which they co-occur with placement transitions, the timing, and the distance involved) as well as whether and how these moves differ from those of their peers could help practitioners and policymakers intervene to prevent the negative sequelae of such moves. Understanding how often school moves co-occur with placement changes might help to better determine the optimal method of intervention to minimize the negative effects of school mobility. For example, in the case of co-occurring placement and school moves, plans might be developed with school districts to allow children to stay in their original schools. In the absence of a placement change, a school move might be driven by the need to provide the child with a better school fit (National Research Council and Institute of Medicine, 2010). Intervention in such cases might entail working with either the original or new school to improve fit.

The timing of school moves might also influence intervention efforts. Moves during the middle of the school year may be more disruptive than those occurring between school years (Grigg, 2012). Further, co-occurring school and placement changes may be more likely to take place during the school year. Thus, it would be important to examine not only when the majority of school changes occur for children in foster care but also if the type of move (i.e., with or without a concurrent placement change) influences timing. If, for example, school moves that are concurrent with placement changes are more likely to occur mid-year, then child welfare and school personnel might try to ease their impact by planning for children to

finish the school year at the original schools, or allowing children to make more gradual placement transitions.

Finally, the distance involved in the move (e.g., within a district versus between contiguous or non-contiguous districts) might make a difference to intervention efforts. Moves to a new school within the same district may be potentially less disruptive because records may transfer more easily and quickly. Additionally, policies and procedures may be more similar within than between districts. For children in foster care, distance might determine whether a placement change has to trigger a school move. For example, it might be easier for district personnel or foster caregivers to arrange transportation to a child's original school if the change is from one placement to another within the same district rather than into a different district.

In addition to delineating the characteristics of foster children's school moves, it might be useful to understand how these moves compare to those experienced by their socioeconomically disadvantaged peers who are not in foster care. To the extent that the moves are similar in terms of timing and distance, the same types of programs might be used to combat negative effects of mobility. However, there have not previously been direct comparisons between children in foster care and their peers living with their biological parents at the same timepoint.

School Mobility as a Mediator Between Early Adversity and School Outcomes

Although researchers have hypothesized that school mobility is a factor in the association between foster care placement and poor school outcomes, the current research base includes almost no quantitative studies of this question. Two decades ago, Eckenrode, Rowe, Laird and Brathwaite (1995) showed that a combination of residential and school mobility mediated the association between maltreatment and school outcomes. However, this and other studies of school mobility and subsequent adjustment have failed to account for the potential effects of earlier problem behavior and academic skills. As is noted above, this is particularly important for children in foster care as they tend to enter school with deficits in both academic skills and self-regulation (Fantuzzo & Perlman, 2007; Pears et al., 2010; Pears, Heywood, Kim, & Fisher, 2011). Thus, children's behavior at school entry may contribute both to school mobility and to poor outcomes. Given the importance of the early elementary years, we chose to focus on examining whether school mobility in these years mediated the association between early adversity and later elementary outcomes, accounting for behavior and academic skills at school entry. From the standpoint of preventive intervention, it is important to document whether school moves mediate the association between foster placement and later difficulties and are thus a viable target for intervention. Alternatively, it may be more productive to intervene on other factors. Additionally, although it might be useful to understand how later school moves affect later elementary outcomes, if early moves can be shown to influence later outcomes, this may allow for timelier, and perhaps more successful, preventive interventions.

Early School Behaviors and Skills as Moderators of the Effects of School Mobility

As is noted above, children in foster care have difficulties from early in school (Fantuzzo & Perlman, 2007; Pears et al., 2010), which may influence both school mobility and associated outcomes. However, there is also a great deal of heterogeneity in the skills and difficulties of children in foster care. Given the importance of early skills to later school outcomes, children in foster care with greater levels of these skills are likely to fare better across the elementary school years and beyond (Entwisle & Alexander, 1999). Thus, skill level might also moderate the effects of school mobility. Children who had high levels of skills at the beginning of elementary school might be more resilient in the face of multiple school transitions because those moves might be less disruptive to their relatively well-developed skills. Greater numbers of moves might not negatively affect their later school adjustment and would not be expected to mediate between early adversity and poor school outcomes. Similarly, children with fewer behavioral problems might be less affected by school mobility because moves might be less likely to impinge upon their behavior. On the other hand, children whose academic and/or behavioral skills were less well-developed at the beginning of the school years might be more susceptible to the potentially disruptive effects of school moves with more transitions leading to the deterioration of already weak skills or failure to gain skills at the rate of their peers. For these children, more school moves would contribute to poorer outcomes in the later elementary years and might mediate the association between their experiences of early adversity and school outcomes. Documenting whether early levels of skills and behavior problems moderate how school moves affect later outcomes might provide important information about how to intervene on school mobility for different subgroups of foster children.

Goals of the Study

The current study sought to address three goals. First, we sought to characterize the school moves of children in foster care in terms of type (e.g., co-occurrence with a placement change), timing (e.g., occurring in the middle of versus between school years), and distance (e.g., within or between districts). Additionally, we compared the number of and distance of moves experienced by children in foster care to those of non-maltreated children of similar age and socioeconomic status who had no history of foster placement. We hypothesized that for children in foster care, the majority of their school moves would co-occur with placement changes. They were also expected to experience significantly more school moves than their peers who were not in foster care, to experience more moves during the school year, and to more often move between rather than within districts.

The second goal of the study was to examine whether early elementary school mobility mediated the effects of foster placement on late elementary school outcomes, particularly when the children's earlier behavior problems and learning skills were taken into account. We hypothesized that early elementary school mobility would mediate the association between children's experience of early adversity (characterized in this sample by being maltreated and placed in foster care) and late elementary school outcomes. The third goal of

the study was to investigate whether children's levels of skills or behavior problems at the start of school influenced the extent to which school mobility affected their subsequent school outcomes. We expected that for children with greater academic skills and fewer behavior problems, school mobility might not have a significant effect on later school adjustment and thus, would not mediate the association between early adversity and later outcomes. On the other hand, for children with lower academic skills and more behavior problems, we expected that school mobility would have a significant negative effect on later outcomes and thus would mediate the link between early adversity and later outcomes.

In this study, we were able to overcome a number of difficulties faced by prior studies of school mobility. First, we used prospective longitudinal data gathered at or near the time of transitions. Thus, we avoided problems commonly associated with the retrospective data used in other studies of school moves, such as difficulty in recall (Sullivan et al., 2010). Additionally, many other school mobility studies have focused on the students in a single school district. Although this may have had the advantage of providing a large sample, these studies were often unable to follow children who left the district (Voight et al., 2012), making it likely that they dropped the most mobile children. The current study followed a sample of children who are traditionally very mobile using data collected from the caregivers, schools, and child welfare records, as well as information about the catchment areas in which the families lived. Thus, we were able to trace children's school mobility across districts and states. As is noted above, past studies of school mobility have not often accounted for the possibility that a child's behavior might account both for mobility and for poor later outcomes. In this study, we were able to account for behavior at the beginning of school, thus considering the contribution of this early behavior to later school adjustment. Finally, by including a comparison sample of children who had never been in foster care, it was possible to determine whether a history of foster care affected school mobility or whether associations with school mobility are due to some common factor such as low socioeconomic status. This also allowed us to compare type, timing, and distance of school moves between children in foster care and their peers.

Method

Participants

The children in this study were drawn from a sample involved in a randomized efficacy trial of a treatment foster care program for preschool-aged children (Multidimensional Treatment Foster Care for Preschoolers; Fisher, Gunnar, Chamberlain, & Reid, 2000) which featured two data collection phases. Phase 1 began when the children were between the ages of 3 and 6 years and continued for 24 months. Children who were involved in Phase 1 were eligible to participate in Phase 2 beginning an average of 33.84 months (SD = 8.20 months) after they had completed Phase 1. The complete sample included a foster care (FC) group of 117 maltreated foster children and a community comparison (CC) group of 60 age- and socioeconomic status-matched, non-maltreated children living with their biological families in a medium-sized metropolitan area in the Pacific Northwest. For the FC group, monolingual or bilingual English-speaking children between the ages of 3 and 6 entering new, non-relative foster placements in which they were expected to stay at least 3 months

were referred to the study through the local child welfare system. Children were excluded if they were not expected to stay in foster care for at least 3 months because they would not be able to complete the intervention being tested in Phase 1. Staff members first contacted the child's caseworker (the legal guardian while the child is in care) and requested consent for the child to participate in the study. Once the caseworker consented, staff members contacted the foster family to invite them to participate. Both the caseworker and the foster family had to consent to participate in order for a child to be successfully recruited.

The CC group included children who had lived consistently with at least one biological parent, whose household income was no more than \$30,000, whose parental education level was less than a 4-year college degree, and whose family had no prior involvement with the child welfare system as verified by a check of child welfare records. (It should be noted that although the children had not experienced documented maltreatment, they may have experienced maltreatment that was not reported to the child welfare system.) Families were recruited via flyers posted at local supermarkets, daycare centers, Head Start classrooms, and through advertisements in local newspapers and newsletters.

The mean age of the children at the baseline assessment was 4.40 years ($SD = 0.83$). During Phase 1 of the study, 80% of the children enrolled in school. Teacher and records data on the children's kindergarten through second grade years were then gathered at the end of every school year. During Phase 2, children were assessed every 6 months for a total of four assessment periods. Eighty-two percent of the children were in Grades 3, 4, or 5 in Phase 2 and again teacher and school records data were collected at the end of every school year. Throughout both phases of the study, data on any placement changes that the child experienced were gathered from child welfare records.

Any child who was in kindergarten through fifth grade during either Phase 1 or Phase 2 of the larger study and for whom there were data available on school moves between kindergarten and second grade was included in the current subsample for a total of 141 children (86 FC and 55 CC). All of the 36 children excluded from the current study (31 FC and 5 CC) either dropped out or ended the study before kindergarten through second grade data or records about school moves could be collected. Children for whom school data were available did not significantly differ from those for whom data were not available in terms of gender or being an ethnic minority; they were slightly older at the start of Phase 1 ($M = 4.46$, $SD = .83$) than the children for whom school data were not available ($M = 4.16$, $SD = .80$; $t = -1.97$, $p = .05$). School data were available for a greater proportion of the original CC sample (92%) than the FC sample (73%).

As is noted above, all of the children in the FC group were part of a larger sample in an efficacy trial to evaluate a treatment foster care program. They were assigned to either an intervention ($n = 45$) or a comparison group ($n = 41$) at study entry. (The CC children were not randomized to different conditions.) Effects of the intervention have been found on targeted outcomes including placement stability of the most mobile children in the group (Fisher, Burraston, & Pears, 2005; Fisher, Kim, & Pears, 2009), security of attachment (Fisher & Kim, 2007), salivary cortisol levels (Fisher, Van Ryzin, & Gunnar, 2011), and foster caregiver reported stress (Fisher & Stoolmiller, 2008). However, school mobility was

not a primary targeted outcome and preliminary independent sample t-tests indicated that there were no significant mean differences between the two foster care groups on the variables used in the present study (using the Holm modification to the Bonferroni method to control for Type I error; Jaccard & Guilamo-Ramos, 2002). Thus, the two foster care samples were combined into a single group (FC).

The characteristics of children in the FC and CC groups are shown in Table 1. There were no significant differences between the FC and CC groups on age or ethnicity. Early placement and maltreatment history information for the FC children is also presented in Table 1 as is information about the number of days spent in foster care between the child's entry into the study and the last grade at which they participated in the study. To obtain information about the types of maltreatment that the children had experienced, child welfare case records were coded using the Maltreatment Classification System (Barnett, Manly, & Cicchetti, 1993). By the last grade at which the children participated in the study, 27% were still in foster care, while 26% had returned to their biological parents, 45% had been adopted and 2% were living with a legal guardian who was not the biological or adoptive parent.

Procedure

Data were collected from 2001 – 2009. Children entered the 24-month Phase 1 between 3 and 6 years of age. For those children who entered school during Phase 1 and completed one or more years total of kindergarten, first, and/or second grade, teacher questionnaires and school records data were collected in the spring of each school year (as well as in the fall for kindergarten only). During Phase 2 of the study, children were in Grades 3, 4, or 5 and school data were collected in the spring of every school year. Ninety-four percent of the children had school data from multiple grades across the phases of the study with 84% contributing data from four or more grades. When either the caregivers or the schools were contacted, detailed records were kept of the children's school placements. In addition to the school assessments, children and their caregivers completed laboratory-based assessments at 6-month intervals over the 24 months of Phase 2. These included self-report measures of the children's academic competence and externalizing behaviors (questions were read to the children by the assessors and children supplied a verbal answer). All measures are described in detail below. Individual scales and multi-method, multi-informant composites were created according to Patterson and Bank's (1986) method: all scales and composites had to show an internal reliability of .60 or higher (standardized alpha), and all items in a scale or composite had to show an item-total correlation of .20 or higher.

Measures

Group status—Placement in foster care was represented by a dichotomous variable. The FC children were coded as 1 (*history of maltreatment and foster placement*), whereas the CC children were coded as 0 (*no history of maltreatment or foster placement*).

Early school moves—Coding early school moves involved multiple sources of information. School records were used to determine if children had moved schools during the school year. Additionally, when assessment staff contacted caregivers during the course of the year to ask them to participate in the assessments that occurred every 3 to 6 months,

they asked the caregivers where the children were attending school. This information and the date of contact were entered into a project database. Finally, when data were collected from schools, the names of the schools and teachers were also entered into the project database, along with the date. A data file was then generated that listed all the schools the child attended in each study year.

For each FC child, placement records that included the beginning and ending dates for each placement as well as the type of placement were obtained from the county branch of the Department of Human Services Child Welfare Division. These were updated at 6-month intervals for all children who remained in foster care.

In order to determine whether school moves co-occurred with placement transitions, the placement and school data files were matched together for each child using dates. Placement changes were matched with the closest school year and thus the school that the child attended. If a child had multiple placement or school changes within a given year, the dates were used to match the placement with the correct school using dates of school attendance. Addresses were used to cross-check the correct school for the catchment area and further ensure that placements were correctly matched with schools. When there had been a gap between participation in Phase 1 and 2 of the study, contact information was used to determine which school the child would have attended and this was cross-referenced with the last known school that the child had attended. If the child made a placement or residence change and there was no address or information about the location, information about a school transition was coded as missing.

This method of using multiple sources of data to track transitions was more complete than other methods that have been utilized in previous studies of school transitions. For example, as is noted above, many of those studies rely exclusively on district records that contain children's moves only within that district, thus excluding children who move out of the district. Given that most children in foster care frequently change districts (as shown below) such an approach would have resulted in the loss of valuable data. The use of multiple sources of data also allowed us to be more confident in the data as well as to have almost complete data about transitions that occurred with placement moves. For example, in only 5% of all coded school years, was information missing on the school that the child was attending. Further, because even when there was a placement change, we did not assume a school transition unless we had additional evidence, we were more likely to underestimate school moves than to overestimate.

Early school moves were defined as those moves occurring during the period from kindergarten through second grade. In order to examine the concurrence of early school moves and placement changes, each matched school and placement for which there were complete data was coded as either 0 “no change in either school or placement,” 1 “new school and same placement,” 2 “same school and new placement” or 3 “new school and new placement.” Further, each school transition was coded in terms of whether the transition involved a move within the same district (coded as 0 “no” and 1 “yes”), whether the transition involved a move between the three districts comprising a metropolitan area that includes the majority of the county population (coded as 0 “no” and 1 “yes”), and whether

the move occurred during the school year (coded as 0 “no” and 1 “yes”). Due to incomplete records for some moves not all variables could be coded for every move. However, missing data were minimal.

Kindergarten fall behavior problems—This variable was a composite of child and teacher report. The children completed the 8-item Conduct Problems subscale (standardized $\alpha = .72$) of the Seattle Personality Questionnaire (Greenberg & Lengua, 1995), a 44-item measure that forms eight subscales, including the Conduct Problems subscale. Teachers completed the 3-item Aggression (standardized $\alpha = .83$) and 3-item Disruptiveness (standardized $\alpha = .86$) subscales of the Loneliness and Social Dissatisfaction Questionnaire for Young Children—Teacher Version (Cassidy & Asher, 1992). Finally, teachers completed the 15-item Liability/Negativity subscale (standardized $\alpha = .91$) of the Emotion Regulation Checklist (Shields & Cicchetti, 1997). These scale scores were standardized and averaged to produce a composite variable measuring kindergarten fall behavior problems (standardized $\alpha = .82$).

Kindergarten fall early learning skills—To measure children's early learning skills, teachers rated the children's performance in language, language comprehension, articulation, and self-help abilities on a scale of 1 (*superior*) to 5 (*delayed*) as a measure of the children's language and learning skills. The scores were reverse coded: higher scores indicated higher skill. The scale showed strong internal consistency with a standardized alpha of .88.

Late elementary outcomes—Two dimensions of late elementary school outcomes were assessed for the present study. Indicators were developed from Phase 2 of the study when the children were in Grades 3, 4, and 5. Teacher and school records data were taken from the end of each grade and if the child was in multiple grades during Phase 2, data from the multiple grades were averaged. For child and parent data, measures were collected twice during the study and scores for the current study were taken from the last timepoint that the measure was completed during Grades 3 to 5.

Academic competence—Data for this composite variable were derived from teacher and parent report and school records. Parents completed the School Competence Scale of the Child Behavior Checklist (CBCL; Achenbach, 1991a), which assesses how well the child is performing in specific subjects as well as more generally academically. Teachers completed the corresponding Academic Performance Scale on the Teacher Report Form (TRF; Achenbach, 1991b). Finally, school records were examined and any special academic services that the child was receiving were classified according to the following categories: special education services in the general classroom, special education in a self-contained classroom, and Chapter I/Title I services. The number of special academic services was reversed scored. As these parent, teacher, and special academic services scores were all moderately to strongly positively correlated ($r_s = .45$ to $.63$, $p_s < .01$), they were standardized and averaged to produce one academic competence score ($\alpha = .79$).

Social emotional competence—Parents rated children's externalizing behaviors on the CBCL (Achenbach, 1991a) and teachers rated the children's behaviors on the TRF (Achenbach, 1991b). The raw scores on the externalizing subscales of both measures were

significantly positively correlated ($r = .56, p < .01$) so they were standardized and averaged to produce one *externalizing behaviors score*. Peer relations were measured using the teacher-completed Peer Preferred Behaviors subscale of the Walker McConnell Scale of School and Behavior Adjustment (Walker & McConnell, 1988), and the parent-completed social competence scale of the CBCL. These two subscales were significantly positively correlated ($r = .45, p < .01$) and thus were standardized and averaged to produce one *social competence score*.

We originally planned to use the behavior and social competence scores separately in the analyses. However, in preliminary analyses the two scores showed a strong association ($r = -.63, p < .01$). To avoid potential problems of multicollinearity, the externalizing behaviors score was reversed and the two subscale scores were combined to produce one *social emotional competence score*.

Control variable—In order to control for the possibility that differences in learning skills and academic competence might be due to differences in *general cognitive ability*, the mean of the children's scaled scores on the Block Design and Vocabulary subscales of the Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R; Wechsler, 1989) were included in the analyses as covariates. These subtests are considered to be the strongest measures of verbal and performance intelligence, respectively, and are highly correlated with other general intelligence measures (Wechsler, 1989).

Analysis plan

First, descriptive information on the school moves of children in foster care and comparison children was examined. Additionally, group differences in number and types of school moves were analyzed using independent *t*-tests and odds ratios. Second, the associations between early school moves and late elementary academic and social emotional outcomes were examined with correlational analyses and path analyses using Mplus 7 (Muthén & Muthén, 1998-2012). Third, the potential moderating effects of early problem behaviors and learning skills were examined in path models using Mplus 7. Full information maximum likelihood (FIML) estimation was used to accommodate missing data which ranged from 0 – 18% across study variables ($M = 11%$). FIML provides unbiased estimates when data are missing at random (Arbuckle, 1996). The largest amount of missing data (18%) was the kindergarten early learning skills variable, while 15% of children were also missing the kindergarten behavior problems variable. Due to this missing data, 115 children were included in the two-group model used to analyze moderation by learning skills described below. Preliminary analyses revealed that there were no differences between the 115 children for whom full kindergarten information was available and those for whom it was not in school mobility or outcome variables.

Results

Characteristics of Early School Moves

In total, the children made 132 school moves during kindergarten, first, and second grades. The number and type of moves are reported by group in Table 2. As a group, children in the

FC group made 78 more early school moves than children in the CC group. Thus, the odds of moving schools if a child was in the foster group were 3.28 times higher than those for children in the CC group ($z = 3.30, p < .01$). Children in the FC group also made more total moves than children in the CC group. The mean number of moves for individual children in the FC group was significantly greater than those for children in the CC group ($t(139) = -4.43, p < .01$). Further, the odds that children in the FC group would experience more than 2 school changes were 6.23 times greater than those for the CC children ($z = 3.53, p < .01$).

The great majority of school moves for the children in the FC group co-occurred with a placement change. Of the 105 school moves for the FC children that occurred during the kindergarten through second grade years, only 22% did not co-occur with a placement change, suggesting that it is typical for placement changes to involve changes in schools. Of the school moves that did not co-occur with placement changes, most involved a change of residence for the child's foster family. None of the children in the CC sample experienced a placement change; the majority of their school moves involved co-occurring residential moves for their families.

Our next question focused on when school transitions tended to occur for children in foster care and whether this differed from the timing of transitions for children from the CC group. Overall, about half of the transitions made by children in the FC group occurred during the school year, while only 19% of the transitions made by children in the CC group did. Thus, children in the FC group were 4.49 times more likely to move during the school year than children in the CC group ($z = 2.81, p < .01$). Examining the association between timing of moves and type (i.e., whether it was concurrent with a placement change) for children in the FC group, it was 11.83 times more likely that a school move during the school year involved a placement change than not ($z = 3.12, p < .01$).

Next the distance involved in school moves was examined. When they moved schools, children in the FC group were 4.08 times more likely to change districts than were children in the CC sample, ($z = 2.92, p < .01$). Similarly, children in the FC group were 2.75 times more likely to make long-distance moves (i.e., moving out of the three districts that comprised the major metro area; $z = 2.28, p < .05$).

Associations Between Early School Moves and Later School Outcomes

The second goal of this study was to determine if early school moves mediated the association between being maltreated and placed in foster care and late elementary school outcomes. Before testing the path model, correlations were examined. As can be seen in Table 3, being in the FC group was negatively associated with early learning skills in kindergarten and academic and social emotional competence in Grades 3 through 5. Conversely, being in the FC group was positively associated with behavior problems in early kindergarten as well as with school moves. School mobility was positively associated with behavior problems in the fall of kindergarten and negatively associated with kindergarten fall early learning skills. Additionally, a greater number of early school moves was associated with poorer academic and social emotional competence later. Early learning skills in kindergarten were negatively associated with concurrent behavior problems and positively associated with academic and social emotional competence in Grades 3 through 5. Behavior

problems in kindergarten fall were negatively associated with both academic and social emotional competence in the late elementary grades.

In order to determine whether the number of school transitions between kindergarten and second grade mediated the associations between being in foster care and later academic and social emotional competence, a path model was run. Early learning skills and behavior problems were used as control variables to rule out the possibility that they might account for associations between school moves and outcomes. The significance of mediated (indirect) paths from foster care placement to each of the late elementary outcomes through early school moves was tested using Mplus. These tests accommodate paths involving multiple variables, estimating the significance of the total effect of the entire path.

The model to test potential mediation fit the data well, $\chi^2(7) = 8.66$, $p = 0.28$, RMSEA = .04, CFI = .99, TLI = .96. As shown in Figure 1, foster care placement was positively associated with the number of early school moves. Controlling for school behavior in the fall of kindergarten, the number of early school moves was in turn significantly negatively associated with the child's social emotional competence in Grades 3 through 5.

Although early school moves were significantly negatively associated with late elementary academic competence in the bivariate correlations, the two variables were no longer significantly associated in the full model. The kindergarten fall variables were associated with the later elementary outcomes in expected ways: behavior problems were negatively linked to social emotional competence, and early learning skills positively associated with academic competence.

There were significant total indirect effects for a mediated path from foster care placement to social emotional competence ($z = -4.10$, $p < .01$). This overall effect appeared to be due to the path from foster care placement to social emotional competence through early school moves ($z = -1.88$, $p = .06$) as well as an indirect path from foster care placement to social emotional competence through kindergarten fall behavior problems ($z = -2.85$, $p < .01$). Thus, there was partial support for the hypothesis that early school moves mediate the association between foster care placement and later social emotional competence.

Moderation of the Associations between School Moves and Outcomes

Potential moderation of the effects of early school moves on later outcomes by kindergarten skills was tested using a path model that included not only the kindergarten skill variables and the early school moves but also two interaction terms, one for school moves and kindergarten fall behavior problems and one for school moves and kindergarten fall learning skills. This model fit the data well, $\chi^2(13) = 13.31$, $p = 0.42$, RMSEA = .01, CFI = .99, TLI = .99. As expected, the path between the interaction of school moves and kindergarten fall learning skills and social emotional competence was significant (Figure 2). The path between school moves and social emotional competence was no longer significant in the presence of the interaction term. This suggests that kindergarten fall early learning skills moderated the effect of school moves on social emotional competence. The path between kindergarten fall learning skills and social emotional competence was significant. No other

paths from the interaction terms to the outcomes were significant and the other patterns of significance were similar to those in Figure 1.

In order to better understand the effects of kindergarten fall early learning skills on the association between school moves and social emotional outcomes as well as to test the hypothesis that the mediational pathway from early adversity to social emotional competence through school moves might be affected, we analyzed two-group models. The sample was divided at the median for kindergarten fall early learning skills with the group above the median characterized by average to above average skills for the sample, and the group below the median by below average skills. The first model was an unconstrained two-group model. In the second two-group model, the paths between school moves and the outcomes were constrained to be equal. A χ^2 test of the difference between the models using the Satorra-Bentler chi square difference formula for nested runs (Satorra & Bentler, 2001) was then conducted. If the two models were significantly different, it would indicate that the association between school moves and the outcomes was dependent on the level of kindergarten fall early learning skills.

The unconstrained model fit the data well, $\chi^2(12) = 12.35$, $p = 0.42$, RMSEA = .02, CFI = 1.00, TLI = .99 and was a significantly better fit than the constrained model (Satorra-Bentler scaled chi-square difference test TRd = 7.17, $p < .05$). As can be seen in Figure 3, when the level of early learning skills was below the median, there was a significant negative association between the number of early school moves and later social emotional competence. When a child's levels of learning skills were above the median, the number of early school moves was not significantly associated with social emotional competence.

Patterns of mediation also differed depending on the level of early learning skills. When the children's early learning skills were below the median, the mediated path from early adversity to social emotional competence through school moves was significant ($z = -2.59$, $p < .01$). When the child's early learning skills were at or above the median, school moves no longer mediated the association.

It should be noted that for children above the median on learning skills, it appears that the path from a history of early adversity to kindergarten behavior problems to difficulties in social emotional competence in Grades 3–5 is more salient than for the children below the median. However, when we tested whether a model with unconstrained paths for early adversity to kindergarten behavior problems to social emotional competence was a better fit than a model in which the paths were constrained to be the same, fit did not differ significantly. Thus, the path from early adversity to kindergarten behavior problems and subsequently to social emotional competence did not differ significantly between the groups.

Discussion

Many young children in foster care experience multiple moves between caretakers while they are in care (Ward, 2009). Prior research suggests that they are also likely to move among schools, as 69% of the children in foster care in the present study did. It is imperative

to understand the characteristics and consequences of school mobility in order to better inform efforts to prevent school difficulties in this very vulnerable population.

In this study, we examined the early school moves of a group of children in foster care. We also compared these children's school moves to those of children from the same age and SES groups. Overall, the children in foster care made more school transitions and were approximately 6 times more likely to make multiple moves, and 4 times more likely to move during the school year and change school districts when they moved.

Understanding the characteristics of the school moves experienced by children in foster care can aid in attempts to prevent potential negative sequelae of school moves. For example, that 51% of the moves for children in foster care occurred during the school year and 86% of school moves occurred between districts suggests that making arrangements to swiftly transfer school records may be one potential way to help ameliorate the negative impacts of those moves. Children may lose instruction time while teachers work to determine the child's academic level. Ensuring that records reach the new school quickly could help teachers to minimize disruptions to the child's academic course. Additionally, as school transitions seem to be fairly inevitable for children in foster care, from a preventive intervention standpoint, it would be important to determine how to instill resilience in children in the face of moves.

Evidence of how such resilience might be encouraged comes from the analyses of the later elementary consequences of early school transitions. Findings point to the centrality of early kindergarten learning skills in moderating the association between early school moves and later poor outcomes. For children who began kindergarten with poorer early learning skills, there was a significant negative association between early school moves and later social emotional competence, suggesting that they were more vulnerable to the effects of school transitions. In contrast, for children who were at or above the median for early learning skills at the start of kindergarten, the association between early school moves and social emotional competence was not significant. Further, early skills moderated the patterns of mediation between early adversity and later school adjustment (moderated mediation; Muller, Judd, & Yzerbyt, 2005). For children with lower learning skills in kindergarten only, early school moves significantly mediated the path between early adversity and social emotional competence in Grades 3 through 5.

The findings of both direct moderation and moderated mediation highlight the potential of early learning skills to buffer the effects of early school mobility. To help children be resilient in the face of school moves (and perhaps accompanying placement changes), caregivers and others who work with the children need to ensure that their early learning and literacy skills are adequate to prepare them for the demands of kindergarten. It may be particularly important for children in foster care to be enrolled in high-quality early learning programs, such as Head Start, for which children in foster care qualify regardless of income (U.S. Department of Health and Human Services, 2011). Additionally, they may benefit from programs specifically designed to target early literacy and behavioral skills in shorter-term formats that make it more likely that these highly mobile children receive the full dosage (Pears et al., 2013).

Understanding the mechanisms underlying deficits in learning skills in children in foster care would also be beneficial to developing preventive interventions. Increasingly, research has documented the role of early adversity such as maltreatment and multiple changes in caregivers in undermining children's self-regulatory skills (Lengua, Honorado, & Bush, 2007; Lewis, Dozier, Ackerman, & Sepulveda, 2007) which in turn have been implicated in deficits in both learning and social emotional skills (Pears et al., 2010). Based on this past research, early learning programs for children in foster care might focus not only on early learning and literacy outcomes but also on self-regulatory skills that are likely to promote both better behavioral and academic performance in the classroom (Blair & Diamond, 2008).

Finally, although early intervention might increase children's resilience in the face of school moves, preventing the moves entirely could also be advantageous. As is noted above, about 28% of foster children's moves occur within the same or contiguous districts, potentially within driving distance, suggesting that school and child welfare systems might be able to prevent some school moves by coordinating transportation efforts. One of the biggest determinants of school mobility may be caregivers' need for transportation to get the child to school (or their lack of such transport). The McKinney-Vento Homeless Education Assistance Improvements Act requires districts to provide transportation for children who are homeless to their schools of origin. This has led some districts to develop novel approaches that could be replicated or expanded for children in foster care. Such efforts do require the support of a range of school personnel as well as endorsement by the family (James & Lopez, 2003).

Although important for documenting the characteristics and effects of school transitions for children in foster care, this study had some limitations. The school records were not always complete. Children in foster care are clearly a very mobile group and it was not always possible to determine when a child had changed schools or whether such a change accompanied a placement transition. Thus, we may have underestimated the number of changes made by this group. However, this study improved upon past studies by including prospective records as well as being able to document moves both between and within school districts.

This study focused on maltreated children who are in foster care. Thus, the results may not be generalizable to all maltreated children. However, maltreated children in foster care have experienced multiple adversities (i.e., maltreatment and the often multiple moves once in care). Thus, it seems particularly important to document the sequelae of these adversities. Additionally, although our sample was somewhat diverse, it was largely Caucasian. Nationwide, the foster care sample typically has a larger representation of ethnic minorities (Magruder & Shaw, 2008). These findings will need to be replicated with a more diverse sample. While we controlled for the effects of early behavior problems on later outcomes, thus reducing the likelihood that both difficulties in later adjustment and school mobility could be accounted for by behavior problems, there is still a possibility that the children's school mobility might have been accounted for by concurrent behavioral difficulties. We did not have access to reasons for school moves. However, we were able to examine the reasons for approximately 90% of the placement changes that children made between kindergarten

and Grade 2, the same period for which school transitions were calculated. In only 12% of the cases was child behavior coded as a factor in the change, although this may slightly underestimate how often child behaviors led to placement changes, perhaps due to the foster caregiver's unwillingness to cite child behavior. While placement and school changes are not equivalent, they are associated, as discussed further below. Thus, if behavior was not a reason for the large majority of the placement changes, it is also unlikely that it was the sole reason for the majority of school changes.

Finally, it would have been interesting to investigate whether the type of school move (e.g., concurrent with a placement change vs. not) as well as the timing (i.e., during the school year vs. not) influenced the effects of the moves. However, the relatively small numbers of moves that did not involve placement changes or that did not occur between school years for children in foster care made it difficult to do this. It could be argued that instability due to placement changes, rather than school mobility, is the primary factor that is detrimental to outcomes for children in foster care. However, it was not possible to disentangle the effects of the two types of changes and represent the frequencies of each type separately in the statistical models without causing problems of multicollinearity (r for the association between placement and school changes = .78). Thus, given the dearth of information about school moves and their effects, it seemed warranted to focus on school transitions here. Additionally, we did not examine placement changes outside of school moves so cannot draw conclusions about the effects of more general placement disruptions.

Future research might concentrate on separating school mobility from placement changes for children in foster care, if possible, in order to determine if there are separate effects of placement and school transitions. Alternatively, school changes without a concurrent placement change could have less impact than those that are concurrent with a placement transition. Additionally, the type of placement transition, such as whether the transition were being made from one foster placement to another versus from a foster placement to an adoptive placement might be influential in determining the impact of the changes. It would also be potentially helpful in future research to examine school mobility in later elementary years to determine if outcomes are differentially impacted depending on the developmental stage at which the transitions occur.

While this study focused on children in foster care, there are other groups of children who may face high school mobility due to homelessness (Fantuzzo, LeBoeuf, Brumley, & Perlman, 2013) or the need for their families to move frequently in order to find work (Gibson & Hidalgo, 2009). Based on the information gained here about children in foster care, future studies could examine whether children in other highly mobile groups show the same patterns of vulnerability to school mobility through early learning skills. If so, they too, might benefit from shorter-term programs that are targeted at enhancing early literacy as well as social emotional skills.

Overall, this study provides evidence that children in foster care are likely to experience multiple school moves in the first 2 years of schooling and that these moves can negatively impact the later school functioning of children who struggled with early learning skills in kindergarten. There are potential points of preventive intervention, however, the most

important of which may be to prepare children for successful kindergarten entry. This may not only make children more resilient in the face of school transitions, but also more generally set them on a course for better school adjustment in the long run.

Acknowledgments

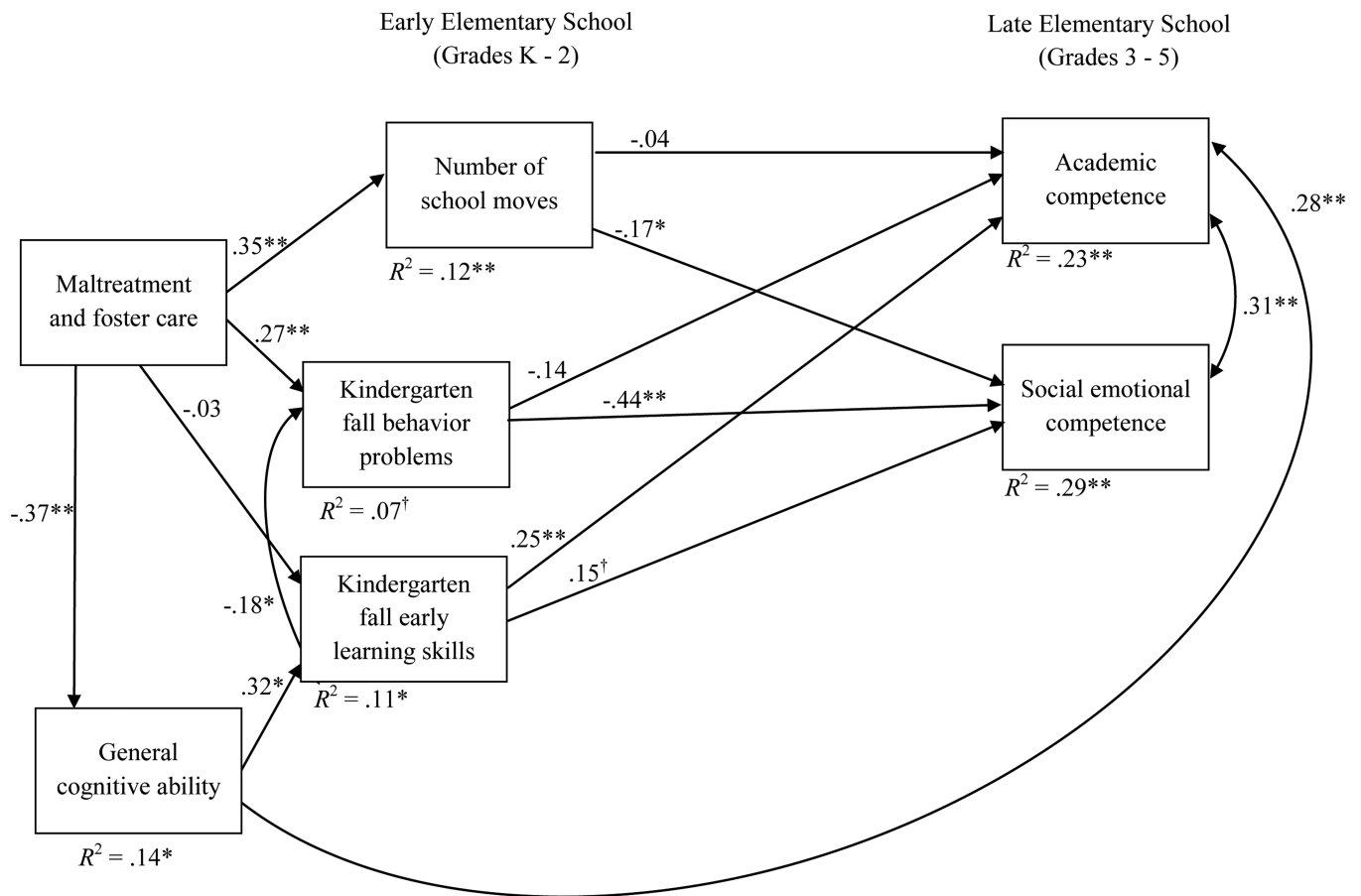
Philip A. Fisher is a co-owner of Treatment Foster Care Consultants, Inc., which provides treatment and consultation in the use of Multidimensional Treatment Foster Care Programs. Support for this article was provided by the following grants: R01 MH59780 Child and Adolescent Treatment and Preventive Intervention Research Branch, NIMH, U.S. PHS and R01 DA021424 and P30 DA023920 Division of Epidemiology, Services and Prevention Research, Prevention Research Branch, NIDA, U.S. PHS. The content of this article is solely the responsibility of the authors and does not necessarily represent the official views of the funding organizations. The authors thank Kristen Greenley for project management, Diana Strand for editorial assistance, and the families, teachers, principals, and staff of the MTFC project for their dedication and participation.

References

- Achenbach, TM. Manual for the child behavior checklist/4-18 and 1991 profile. University of Vermont; Burlington, VT: 1991a.
- Achenbach, TM. Manual for the teacher's report form and 1991 profile. University of Vermont Department of Psychiatry; Burlington, VT: 1991b.
- Arbuckle, JL. Full information estimation in the presence of incomplete data.. In: Marcoulides, GA., Schumaker, RE., editors. Advanced structural equation modeling: Issues and techniques. Lawrence Erlbaum Associates; Mahwah, NJ: 1996. p. 243-277.
- Barnett, D., Manly, JT., Cicchetti, D. Defining child maltreatment: The interface between policy and research.. In: Cicchetti, D., Toth, S., editors. Child abuse, child development, and social policy. Vol. 8. Ablex Publishing; Norwood, NJ: 1993. p. 7-73.
- Blair C, Diamond A. Biological processes in prevention and intervention: The promotion of self-regulation as a means of preventing school failure. *Development and Psychopathology*. 2008; 20:899–911. doi:10.1017/S0954579408000436. [PubMed: 18606037]
- Blome WW. What happens to foster kids: Educational experiences of a random sample of foster care youth and a matched group of non-foster care youth. *Child and Adolescent Social Work Journal*. 1997; 14:41–53.
- Cassidy J, Asher SR. Loneliness and peer relations in young children. *Child Development*. 1992; 63:350–365. doi:10.2307/1131484. [PubMed: 1611939]
- Conger D, Finkelstein MJ. Foster care and school mobility. *The Journal of Negro Education*. 2003; 72:97–103. doi:10.2307/3211293.
- Duncan GJ, Dowsett CJ, Claessens A, Magnuson K, Huston AC, Klebanov P, Japel C. School readiness and later achievement. *Developmental Psychology*. 2007; 43:1428–1446. doi: 10.1037/0012-1649.43.6.1428. [PubMed: 18020822]
- Eckenrode J, Rowe E, Laird M, Brathwaite J. Mobility as a mediator of the effects of child maltreatment on academic performance. *Child Development*. 1995; 66:1130–1142. doi: 10.2307/1131803. [PubMed: 7671653]
- Entwisle, DR., Alexander, KL. Early schooling and social stratification.. In: Pianta, RC., Cox, MJ., editors. *The transition to kindergarten*. Paul H. Brookes Publishing Co.; Baltimore, MD: 1999. p. 14-38.
- Fantuzzo J, LeBoeuf W, Brumley B, Perlman S. A population-based inquiry of homeless episode characteristics and early educational well-being. *Children and Youth Services Review*. 2013; 35:966–972. doi:10.1016/j.childyouth.2013.02.016. [PubMed: 24072948]
- Fantuzzo J, Perlman S. The unique impact of out-of-home placement and the mediating effects of child maltreatment and homelessness on early school success. *Children and Youth Services Review*. 2007; 29:941–960. doi:10.1016/j.childyouth.2006.11.003.

- Ferguson HB, Wolkow K. Educating children and youth in care: A review of barriers to school progress and strategies for change. *Children and Youth Services Review*. 2012; 34:1143–1149. doi: 10.1016/j.childyouth.2012.01.034.
- Fisher PA, Burraston B, Pears K. The early intervention foster care program: Permanent placement outcomes from a randomized trial. *Child Maltreatment*. 2005; 10:61–71. doi: 10.1177/1077559504271561. [PubMed: 15611327]
- Fisher PA, Gunnar MR, Chamberlain P, Reid JB. Preventive intervention for maltreated preschool children: Impact on children's behavior, neuroendocrine activity and foster parent functioning. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2000; 39:1356–1364. doi: 10.1097/00004583-200011000-00009. [PubMed: 11068890]
- Fisher PA, Kim HK. Intervention effects on foster preschoolers' attachment-related behaviors from a randomized trial. *Prevention Science*. 2007; 8:161–170. doi:10.1007/s11121-007-0066-5. [PubMed: 17340186]
- Fisher PA, Kim HK, Pears KC. Effects of Multidimensional Treatment Foster Care for Preschoolers (MTFC-P) on reducing permanent placement failures among children with placement instability. *Child and Youth Services Review*. 2009; 31:541–546. doi:10.1016/j.childyouth.2008.10.012.
- Fisher PA, Stoolmiller M. Intervention effects on foster parent stress: Associations with child cortisol levels. *Development and Psychopathology*. 2008; 20:1003–1021. doi:10.1017/S0954579408000473. [PubMed: 18606041]
- Fisher PA, Van Ryzin MJ, Gunnar MR. Mitigating HPA axis dysregulation associated with placement changes in foster care. *Psychoneuroendocrinology*. 2011; 36:531–539. doi:10.1016/j.psyneuen.2010.08.007. [PubMed: 20888698]
- Fothergill KE, Ensminger ME, Green KM, Crum RM, Robertson J, Juon H. The impact of early school behavior and educational achievement on adult drug use disorders: A prospective study. *Drug and Alcohol Dependence*. 2008; 92:191–199. doi:10.1016/j.drugalcdep.2007.08.001. [PubMed: 17869029]
- Gibson MA, Hidalgo ND. Bridges to success in high school for migrant youth. *Teachers College Record*. 2009; 111:683–711.
- Greenberg, M., Lengua, L. Scale construction for the Seattle Personality Inventory. University of Washington; Seattle, WA: 1995.
- Grigg J. School enrollment changes and student achievement growth: A case study in educational disruption and continuity. *Sociology of Education*. 2012; 85:388–404. doi: 10.1177/0038040712441374.
- Herbers JE, Cutuli JJ, Supkoff LM, Heistad D, Chan C-K, Hinz E, Masten AS. Early reading skills and academic achievement trajectories of students facing poverty, homelessness, and high residential mobility. *Educational Researcher*. 2012; 41:366–374. doi:10.3102/0013189X12445320.
- Jaccard JJ, Guilamo-Ramos V. Analysis of variance frameworks in clinical child and adolescent psychology: Issues and recommendations. *Journal of Clinical Child and Adolescent Psychology*. 2002; 31:130–146. doi:10.1207/153744202753604557. [PubMed: 11845645]
- James BW, Lopez PD. Transporting homeless students to increase stability: A case study of two Texas districts. *Journal of Negro Education*. 2003; 72:126–140. doi:10.2307/3211296.
- Lengua L, Honorado E, Bush NR. Contextual risk and parenting as predictors of effortful control and social competence in preschool children. *Journal of Applied Developmental Psychology*. 2007; 28:40–55. doi:10.1016/j.appdev.2006.10.001. [PubMed: 21687825]
- Lewis E, Dozier M, Ackerman J, Sepulveda S. The effect of caregiving instability on adopted children's inhibitory control abilities and oppositional behavior. *Developmental Psychology*. 2007; 43:1415–1427. [PubMed: 18020821]
- Magruder J, Shaw TV. Children ever in care: An examination of cumulative disproportionality. *Child Welfare: Journal of Policy, Practice, and Program*. 2008; 87:169–188.
- McClelland MM, Acock AC, Piccinin A, Rhea SA, Stallings MC. Relations between preschool attention span-persistence and age 25 educational outcomes. *Early Childhood Research Quarterly*. 2013; 28:314–324. doi:10.1016/j.ecresq.2012.07.008. [PubMed: 23543916]
- Mehana M, Reynolds AJ. School mobility and achievement: A meta-analysis. *Children and Youth Services Review*. 2004; 26:93–119. doi:10.1016/j.childyouth.2003.11.004.

- Muller D, Judd CM, Yzerbyt VY. When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*. 2005; 89:852–863. doi:10.1037/0022-3514.89.6.852. [PubMed: 16393020]
- Muthén, LK., Muthén, BO. *Mplus User's Guide*. 7th ed.. Muthén & Muthén; Los Angeles, CA: 1998-2012.
- National Research Council and Institute of Medicine. *Student mobility: Exploring the impact of frequent moves on achievement: Summary of a workshop*. 2010. Retrieved from http://www.nap.edu/catalog.php?record_id=12853
- Patterson GR, Bank L. Bootstrapping your way in the nomological thicket. *Behavior Assessment*. 1986; 8:49–73.
- Pears KC, Fisher PA, Bruce J, Kim HK, Yoerger K. Early elementary school adjustment of maltreated children in foster care: The roles of inhibitory control and caregiver involvement. *Child Development*. 2010; 81:1550–1564. doi:10.1111/j.1467-8624.2010.01491.x. [PubMed: 20840240]
- Pears KC, Fisher PA, Kim HK, Bruce J, Healey CV, Yoerger K. Immediate effects of a school readiness intervention for children in foster care. *Early Education and Development*. 2013; 24:771–791. doi:10.1080/10409289.2013.736037. [PubMed: 24015056]
- Pears KC, Heywood CV, Kim HK, Fisher PA. Pre-reading deficits in children in foster care. *School Psychology Review*. 2011; 40:140–148. [PubMed: 21869854]
- Rees P. The mental health, emotional literacy, cognitive ability, literacy attainment and ‘resilience’ of ‘looked after children’: A multidimensional, multiple-rater population based study. *British Journal of Clinical Psychology*. 2013; 52:183–198. doi:10.1111/bjc.12008. [PubMed: 24215147]
- Satorra A, Bentler PM. A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*. 2001; 66:507–514. doi:10.1007/BF02296192.
- Shields A, Cicchetti D. Emotion regulation among school-age children: The development and validation of a new criterion Q-sort scale. *Developmental Psychology*. 1997; 33:906–916. doi: 10.1037//0012-1649.33.6.906. [PubMed: 9383613]
- Shonkoff JP, Garner AS, Siegel BS, Dobbins MI, Earls MF, Garner AS, Wood DL. The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*. 2012; 129:e232–e246. doi:10.1542/peds.2011-2663. [PubMed: 22201156]
- Sullivan MJ, Jones L, Mathiesen S. School change, academic progress, and behavior problems in a sample of foster youth. *Children and Youth Services Review*. 2010; 32:164–170. doi:10.1016/j.chilyouth.2009.08.009.
- U.S. Department of Health and Human Services, Administration for Children and Families. Information memorandum: Child Welfare and Head Start partnerships: Partnering with families involved in Head Start and Early Head Start programs. 2011. Retrieved from: http://www.acf.hhs.gov/programs/cb/laws_policies/policy/im/2011/im1101.htm
- Voight A, Shinn M, Nation M. The longitudinal effects of residential mobility on the academic achievement of urban elementary and middle school students. *Educational Researcher*. 2012; 41:385–392. doi:10.3102/0013189X12442239.
- Walker, HM., McConnell, SR. *The Walker-McConnell Scale of Social Competence and School Adjustment*. Pro-Ed.; Austin, TX: 1988.
- Ward H. Patterns of instability: Moves within the care system, their reasons, contexts and consequences. *Children and Youth Services Review*. 2009; 31:1113–1118. doi:10.1016/j.chilyouth.2009.07.009.
- Wechsler, D. *Manual for the Wechsler Preschool and Primary Scales of Intelligence-Revised*. The Psychological Corporation; San Antonio, TX: 1989.
- Zima BT, Bussing R, Freeman S, Yang X, Belin TR, Forness SR. Behavior problems, academic skill delays and school failure among school-aged children in foster care: Their relationship to placement characteristics. *Journal of Child and Family Studies*. 2000; 9:87–103.



Note: K = Kindergarten.
 Values represent standardized coefficients.
[†] $p < .10$; * $p < .05$; ** $p < .01$

Figure 1.
 Effects of Early School Moves on Late Elementary School Outcomes

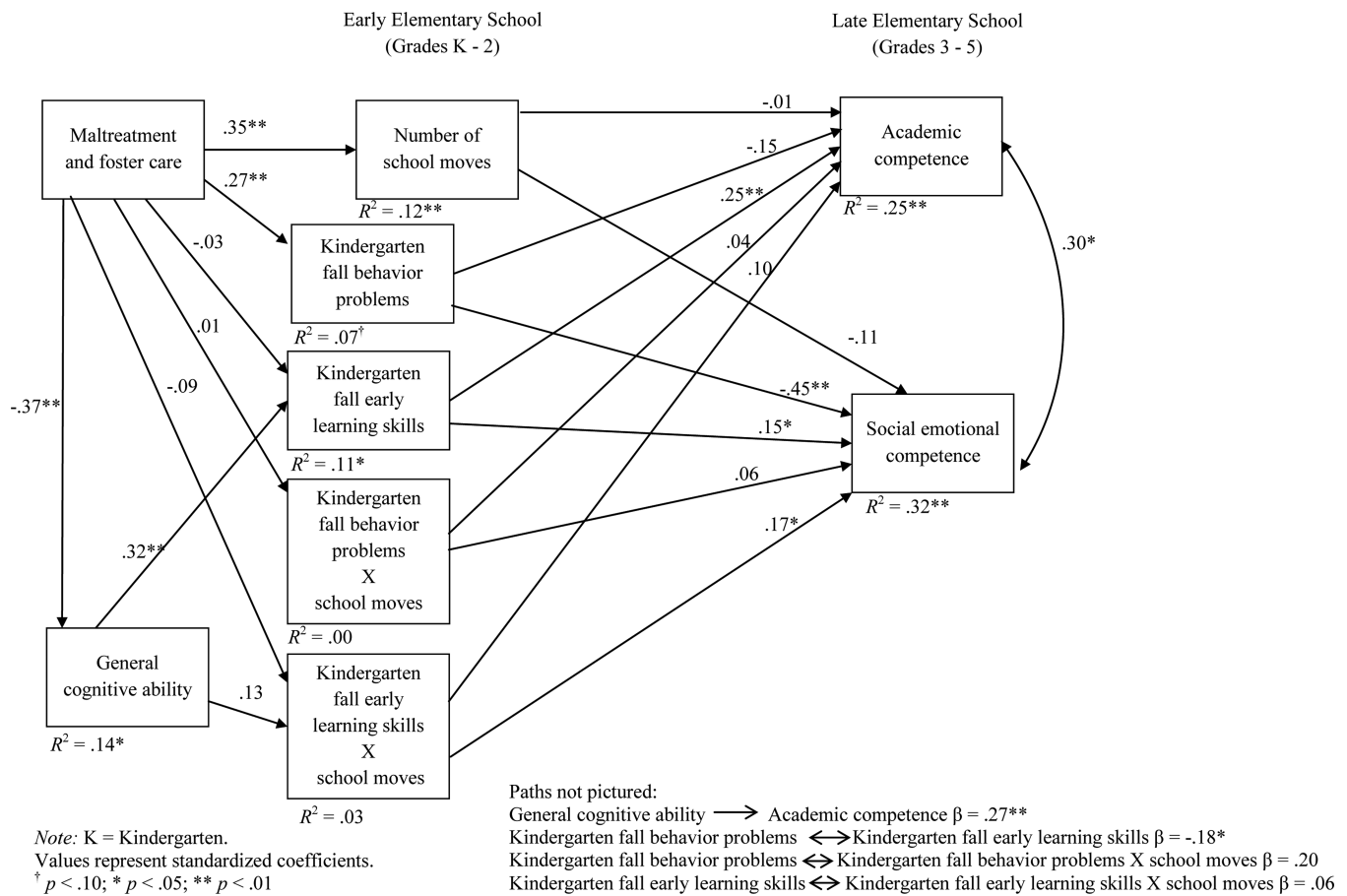
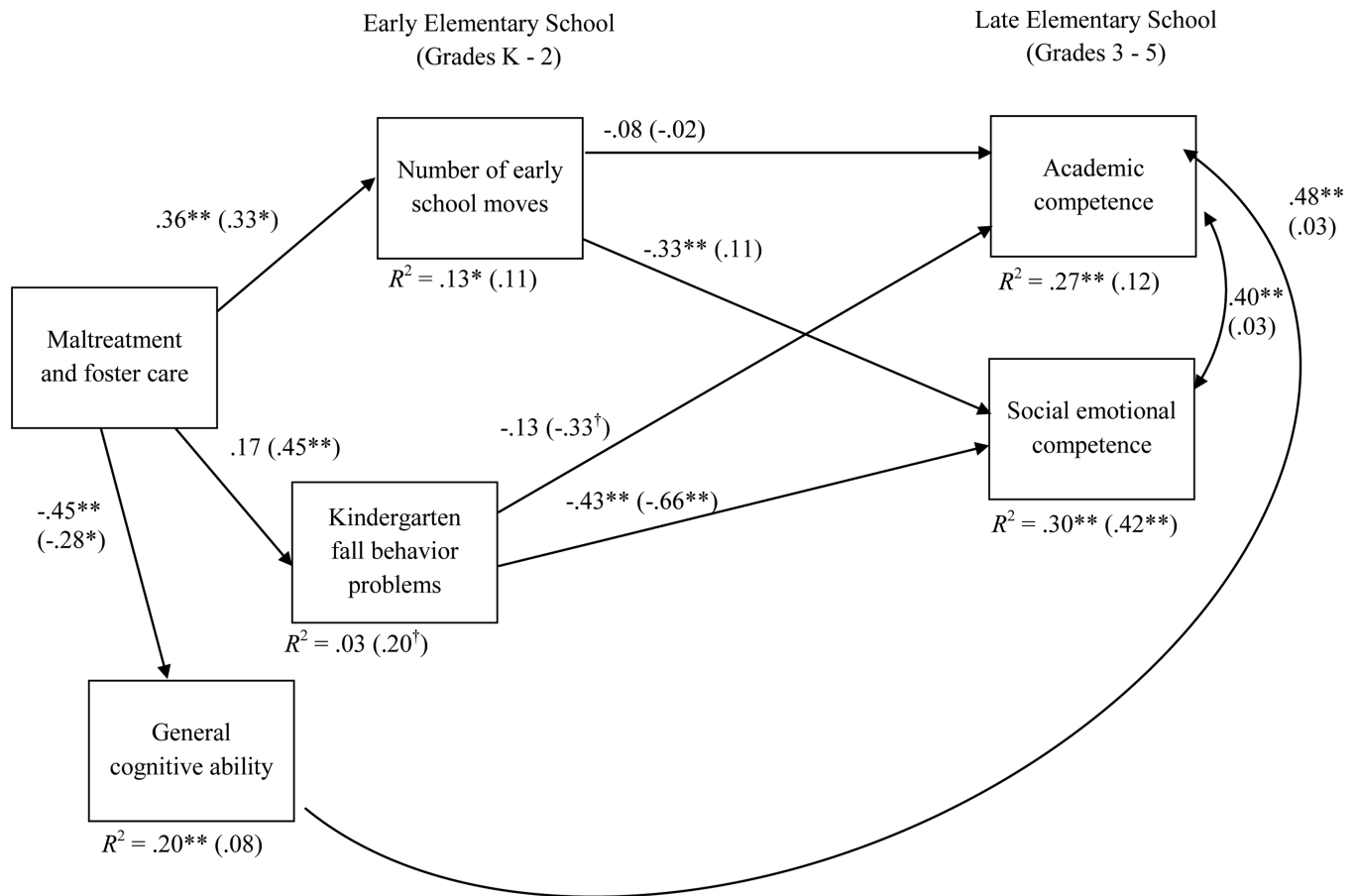


Figure 2.
 Moderator Effects of Kindergarten Fall Behavior and Early Learning Skills on the Association Between Early School Moves and Late Elementary School Outcomes



Note: K = kindergarten. Values represent standardized coefficients. Coefficients for children above the median are in parentheses.
[†]p < .10; * p < .05; ** p < .01

Figure 3. Effects of Early School Moves on Late Elementary School Outcomes for Children Below or (Above) the Median on Kindergarten Fall Early Learning Skills

Table 1

Sample Demographics

	Foster Care Group	Community Comparison Group
Mean age in years (<i>SD</i>)	4.56 (0.84)	4.31 (0.79)
Male	54%	51%
Ethnicity		
Caucasian	86%	78%
African American	1%	6%
Native American	6%	7%
Pacific Islander	0%	2%
Mixed race	3%	2%
Other/unknown	4%	5%
Placement and maltreatment histories ^a		
Mean age in years at first placement into foster care (<i>SD</i>)	3.58 (1.43)	
Mean number of days in foster care prior to study entry (<i>SD</i>)	167 (192)	
Frequency of physical abuse	37%	
Frequency of sexual abuse	27%	
Frequency of physical neglect	81%	--
Frequency of supervisory neglect	88%	--
Frequency of emotional maltreatment	89%	--
Mean number of days in foster care by last grade in study (<i>SD</i>)	986 (604)	--

^aBecause children could experience more than one type of maltreatment, percentages will not sum to 100.

Table 2

Characteristics of School Moves

	Foster Care Group (<i>n</i> = 86)		Community Comparison Group (<i>n</i> = 55)	
Total number of early school moves per group	105		27	
Mean number of school moves per child (<i>SD</i>)	1.22	(1.10)	0.49	(0.66)
Number of children experiencing...				
0 school moves	27	31%	33	60%
1 school move	26	30%	17	31%
2 school moves	23	27%	5	9%
3+ school moves	10	12%	0	--
Type of school move				
Concurrent with new placement	82	78%	0	--
Concurrent with residence change only (same placement)	16	15%	22	81%
No concurrent placement or residence change	7	7%	5	19%
Timing of school move				
During school year	51	51%	5	19%
Between school years	50	49%	22	81%
Was the school move within the same district?				
Yes	15	14%	11	41%
No	89	86%	16	59%
Was the school move within the same metro region?				
Yes	29	28%	14	52%
No	74	72%	13	48%

Table 3

Bivariate Correlations Between Factors in the Model

	1	2	3	4	5
1. Maltreated and in foster care ^a	--				
2. Number of early school moves	.35 ^{**}	--			
3. Behavior problems – K fall	.27 ^{**}	.20 [*]	--		
4. Early learning skills – K fall	-.17 [†]	-.20 [*]	-.23 [*]	--	
5. Academic competence Gr. 3 – 5	-.24 ^{**}	-.20 [*]	-.26 ^{**}	.38 ^{**}	--
6. Social emotional competence Gr. 3 – 5	-.35 ^{**}	-.25 ^{**}	-.40 ^{**}	.24 ^{**}	.45 ^{**}

K = Kindergarten, Gr. = Grade.

^a1 = yes, 0 = no

[†] $p < .10$

^{*} $p < .05$

^{**} $p < .01$