Relations between the everyday activities of preschoolers and their teachers' perceptions of their competence in the first years of school

By: Jonathan R. H. Tudge, Dolphine A. Odero, Diane M. Hogan, and Kathleen E. Etz

Abstract:

This paper contributes to a growing literature that suggests that in order to understand the transition to school, one should employ an ecological approach. Such an approach involves simultaneous consideration of individual and contextual factors, studied over time. Much of the current literature on the transition focuses on the transition from the perspective of school, but we were interested in relations between what occurs prior to school and performance in school. We used Bronfenbrenner's Process-Person-Context-Time (PPCT) ecological model to focus primarily on the relations between school-relevant activities of preschool-aged children and teachers' subsequent perception of the children's competence once they had entered school. At Time 1 we observed 20 3-year-olds' engagement in everyday activities (Process) and their initiation of those activities (Person) over a 20-hour period covering the equivalent of an entire waking day. Children were drawn from two social classes (Context). The preschool observations were followed by 2 consecutive years of teacher reports of academic competence following entry into elementary school (Times 2 and 3). Middle-class preschoolers engaged in more school-relevant activities than did working-class children, and preschoolers who initiated and engaged in more conversations were subsequently perceived by their teachers as being more competent.

Keywords: Ecological theory | Preschoolers' activities | Parents' beliefs | Teachers' perceptions | Longitudinal

Article:

1. Introduction

Entering school is one of the most critical transitions children in the industrialized world undergo, and a good deal of recent attention has focused on trying to ensure a successful entry (Pianta & Cox, 1999; Rimm-Kaufman, Pianta, & Cox, 2000). As the National Education Goals Panel wrote in 1991, "By the year 2000, all children will start school ready to learn" (quoted in Meisels, 1996, p. 408). Despite this optimistic statement, there are clearly differences in

teachers' perceptions of children's "readiness," however that concept is defined (Meisels, 1999). Those who enter school well prepared by the standards of their teachers begin at an advantage over their less well prepared peers, an advantage that frequently becomes progressively greater as time goes on (Douglas, 1964, Entwisle & Alexander, 1999, Kerckhoff, 1993, Rimm-Kaufman & Pianta, 2000, Vernon-Feagans, 1996). In part this differentiation could be a product of teachers' perceptions and expectations—children they perceive to be academically more advanced may be treated differently and tend to outperform their peers who are perceived as less competent (Cooper, 1979; Meisels, Steele, & Quinn-Leering, 1993; Rosenthal & Jacobson, 1968, Saracho, 1991).

What influences teachers' perceptions of their young students? Within a short time after entry to kindergarten, many teachers have formed their perceptions of the children and their backgrounds (Meisels, 1999). They often have met the children's parents or guardians (Zill, 1999) and, given the typical homogeneity of elementary schools' catchment areas, they know a good deal about the families' socioeconomic status and ethnic background. Moreover, they have formed an initial impression of the children's ease of making the transition, and may have already assessed some of the skills, abilities, and competencies that the children have in a variety of domains.

Children, it is clear, come to school with varied skills, abilities, and competencies that influence teachers' perceptions of their "readiness" for school. As Meisels, 1996, Meisels, 1999 points out, however, it may be more productive to view readiness as an ecological rather than an individual characteristic; readiness for school is linked to home–school expectations and to the social and cultural meanings that have arisen in the communities in which the children have grown (Doucet, 2000, Graue, 1999, Rimm-Kaufman & Pianta, 2000). This view requires that we focus more attention on parents' values and beliefs about raising their children and about the typically occurring activities in which children engage. Unfortunately, little is known about the everyday activities of children of preschool age, at least in the United States. The majority of research on this topic has been conducted by cultural anthropologists and cross-cultural developmental psychologists in non- or semi-industrialized societies (Goncu, 1999, Super & Harkness, 1997; Tudge et al., 1999, Tudge et al., 1999; Whiting & Edwards, 1988).

This is not to say that those who are interested in children's transition to school have ignored what goes on within the home. A good deal of research has focused on examining how to make the transition to kindergarten easier for children, and to ensure not only that the transition is smooth but that children are successful once they reach kindergarten and the start of their formal school career. Pianta and Walsh (1996), for example, argued that a successful transition requires establishing good connections between parents and teachers in which the emphasis is on the child's development. Ramey and Ramey (1999) make a similar argument about the importance of the links between home and school, particularly when there are ethnic and cultural differences between the children's families and their teachers. Entwisle and Alexander (1999) extend the argument by pointing to the particular problems experienced by children from low-income families. It is thus a problem that kindergarten teachers typically have very little contact with their children's families prior to the time that the children enter school (Pianta et al., 1999, Pianta et al., 1999).

Moreover, the practices designed to make it easier for families and children to make the transition remain "by and large cursory and not well suited to families' needs" (Pianta et al., 1999, Pianta et al., 1999, p. 9). The reason may well stem from the fact that much of the research on the issue of transition to elementary school has examined the issue from the perspective of the school. For example, only one chapter in Pianta and Cox's (1999) book on the transition deals explicitly with a "unique analysis" of how "families and schools operate within a common developmental system" (Pianta et al., 1999, Pianta et al., 1999, p. 9). In this chapter, however, Christenson (1999) focuses on family involvement in education *after* the children have entered school, although she recognizes that the home plays a hugely important role in the preparation of children for school. She cites Bronfenbrenner to the effect that "the voiced but too often forgotten factor in terms of school practices is that the informal education that takes place in the family is a powerful prerequisite for success in formal education" (Christenson, 1999, p. 145). A good deal of other research (e.g., Epstein, 1996; Melton, Limber, & Teague, 1999) is also centered on parent involvement once children have entered school.

What is it about the home that might be expected to make a difference in the transition to school? One clear aspect has to do with the social-class background of the parents (Douglas, 1964, Entwisle & Alexander, 1993, Entwisle & Alexander, 1999, Kerckhoff, 1993). Although the measurement of both socioeconomic status and social class is notoriously complicated (Hauser, 1994; Hoff, Laursen, & Tardif, 2002), children from working-class families typically enter school at a disadvantage from those from middle-class backgrounds. What is it about social class that might make a difference? One important differentiating factor is parental values and beliefs about child-rearing. Following Bronfenbrenner's (1958) seminal work showing that middle- and working-class families socialize their children differently, a variety of scholars have shown clear differences in parental values or ideas related to their social-class background (e.g., Goodnow & Collins, 1990; Hoff et al., 2002; Kohn, 1977, Kohn, 1995, Palacios & Moreno, 1996; Tudge et al., 1999, Tudge et al., 1999; Tudge, Hogan, Snezhkova, Kulakova, & Etz, 2000).

Values and ideas about raising children are only likely to be effective if they are translated into practice, and there is evidence to support the links between them (Goodnow & Collins, 1990; Luster, Rhoades, & Haas, 1989). Class-linked variations in behavior with children have been found both in terms of preparation for school and parental involvement in school. For example, Eccles and Harold (1996) examined class-related differences in parents' sense of self-efficacy, their perceptions of their children's abilities, their assumptions about their role in their children's education, and their attitudes toward school. They found a relationship between these attitudes and the amount of time parents spent with their children on school-related activities once the children had gone to school. One of the most important class-linked differentiating factors appears to be variations in language and literacy (Hart & Risley, 1995, Heath, 1983; Plewis, Mooney, & Creeser, 1990; Walker, Greenwood, Hart, & Carta, 1994). One key aspect of language that seems predictive of children's later competence in school is communication with adults when they use distancing strategies (Sigel, 1982; Sigel, Stinson, & Kim, 1993) in which children are encouraged to talk about things not present in the immediate setting. Relatively small initial differences in the amount and type of language used by children from different social-class groups widen dramatically over time (Entwisle & Alexander, 1993, Entwisle & Alexander, 1999, Hart & Risley, 1995, Kerckhoff, 1993). The manner, not simply the type, of communication between parents and their preschool-aged children is also

relevant (Baumrind, 1989, Smetana, 1994) and has also been linked to the children's subsequent school performance (Cowan, Cowan, Schulz, & Heming, 1994; Grolnick & Ryan, 1989; Pettit, Bates, & Dodge, 1997).

Language and communication style are not the only important aspects of preschoolers' lives, but the interactions between parents and children while they engage in school-relevant activities (looking at books, early math activities, helping children understand how and why things work) are likely to be very helpful means of easing the transition to school. Intervention studies have supported this position, given their interest in changing the type and manner of parent–child interactions in the course of children's activities to make a better fit with the classroom. For example, the Abecedarian project (Burchinal, Campbell, Bryant, Wasik, & Ramey, 1997; Campbell & Ramey, 1994, Ramey & Ramey, 1999, Vernon-Feagans, 1996) tries to build connections between teachers and parents so as to help change typical patterns of parent–child interaction and, in so doing, increase the impact of their preschool-based interventions.

Perhaps the best-known approach to the links between aspects of the early environment and subsequent school performance is that of Bradley and his colleagues (Bradley & Caldwell, 1979; Bradley, Caldwell, & Rock, 1988; Bradley, Corwyn, Burchinal, McAdoo, & García–Coll, 2001a; Bradley, Corwyn, McAdoo, & García–Coll, 2001b). These scholars have extensively explored the links between the home environment during the preschool years and subsequent intellectual functioning. One longitudinal study involved 42 children from diverse SES and racial backgrounds, using the HOME inventory (Caldwell & Bradley, 1984) at 6 and 24 months and again when the children were aged 10 or 11. The HOME involves a mixture of a semi-structured interview and observations, and lasts approximately 1 hour. Bradley et al. (1988) were interested in the correlations between the HOME scores and measures of scholastic achievement and classroom behavior, and found significant correlations at each age, though more, and stronger, correlations with the outcomes and the 2-year and 10-year HOME scores. More recently Bradley and his colleagues (Bradley et al., 2001a, Bradley et al., 2001b) have used a short version of the HOME (using six items on learning stimulation, four on parental responsiveness, one on spanking, four on teaching, and four on the physical environment) with approximately 5,000 children from birth to age 14 in four ethnic groups, divided into those in poverty or non-poverty status. They found clear variations in the HOME-SF by age, ethnicity, and poverty status (Bradley et al., 2001b), and developmental outcomes that clearly were influenced by the degree of learning stimulation the children were reported to have experienced (Bradley et al., 2001a).

None of the studies examined above focus explicitly on what the children themselves bring to their environments or to the interactions, although, as Bradley and his colleagues wrote, "there is near-universal agreement on the value of understanding the dynamic interplay between child and environment" (Bradley et al., 2001b, p. 1844). Bandura (2001) noted: "The self system is not merely a conduit for sociostructural influences" (p. 15); children not only have a profound effect on the other members of their family but also on their teachers and classmates once they go to school. Some view children's roles in changing their environments primarily in terms of their basic temperaments (Kagan & Snidman, 1991, Thomas & Chess, 1977). Others (see e.g., Csikszentmihalyi & Rathunde, 1998) discuss a variety of terms that represent a more dynamic characteristic of children, such as Bronfenbrenner's (1989) concept of developmentally

instigative characteristics, the Blocks' (1980) discussion of ego resiliency, Bandura's (1997) view of self-efficacy, and Ford and Lerner's (1992) description of flexible self-regulation. In each case the child brings something to the situation that changes it. It does not do so in a vacuum, of course; children and the environments in which they are situated form a complex system (Lerner & Lerner, 1983). For example, parents clearly play a role in encouraging children to feel self-confident and relatively autonomous (Baumrind, 1989, Darling & Steinberg, 1993).

Because of the complexity of this interplay we, in common with a number of scholars currently interested in the issue of transition to kindergarten (Pianta et al., 1999, Pianta et al., 1999, Rimm-Kaufman & Pianta, 2000), believe that research on the relations between early childhood experiences and the transition to school would benefit from the application of Bronfenbrenner's ecological theory (Bronfenbrenner, 1989, Bronfenbrenner, 1993, Bronfenbrenner, 1995, Bronfenbrenner, 1999, Bronfenbrenner & Ceci, 1994, Bronfenbrenner & Morris, 1998). In our research we have therefore used Bronfenbrenner's Process-Person-Context-Time (PPCT) design to understand the complex relations between young children's activities and their subsequent competence in school (Tudge et al., 1999, Tudge et al., 1999; Tudge, Doucet, & Hayes, 2001).

At the heart of Bronfenbrenner's framework are what he has termed "proximal processes" which are the everyday interactions between the developing persons and the symbols, objects, and (most important) people in their everyday contexts. Everyday typically occurring activities that involve children and those around them (such as parent–child or child–child interaction, group or solitary play, reading, watching television) are the "engines of development" according to Bronfenbrenner (1995, p. 620), the things that drive the course of development. In this study, we assessed proximal processes by observing the naturally occurring everyday activities of 3-year-olds and their social partners, following the children in whatever setting they were situated.

The personal characteristics of the individuals involved in these everyday activities play an important role in determining which activities children are involved in. Bronfenbrenner's concept of "developmentally instigative" characteristics include "directive beliefs," such as the personal values and beliefs of the individuals concerned (such as a parent valuing self-direction in her child), which might determine the types of activities that parent encourages. They also involve characteristics of the children themselves, for example their "structuring proclivities," such as their motivation, temperament, initiative, and so on. Children are not simply influenced by their environments but actively change them, for example by initiating new activities and drawing other people into those activities. In this study we examined two developmentally instigative characteristics (parents' child-rearing values and the extent to which children initiated the activities in which they were involved).

Proximal processes are not influenced simply by the personal characteristics of those who are engaging in them, however; they also are influenced by contextual variation. Bronfenbrenner argued that to understand development, the research design must involve "a contrast between at least two macrosystems most relevant to the developmental phenomenon under investigation" (1993, p. 39). A macrosystem involves any group whose members share value or belief systems, "resources, hazards, lifestyles, opportunity structures, life course options and patterns of social interchange" (Bronfenbrenner, 1993, p. 25). Thus, one can satisfy the minimum requirement by

conducting cross-cultural research as it is typically understood, or by examining groups that are distinguished by race, ethnicity, or social class within a single society. In this study we examined two groups of families, distinguished by socioeconomic status.

The final element of the PPCT model is time. In part this involves what Bronfenbrenner has termed the chronosystem—setting the research into its historical setting, and examining the development of different cohorts, as illustrated by Elder and his colleagues (Caspi, Elder, & Bem, 1987; Elder, 1974, Elder, 1998). Most important, however, is the study of development over time, with data gathered at a minimum of two points in time. Cross-sectional studies, while informative about groups that differ by age, only *infer* development rather than study it directly. In this study we observed children's initiation of and participation in everyday activities and parents' child-rearing values when they were of preschool age and obtained ratings of their academic competence once they had entered school.

2. Hypotheses

Four hypotheses were derived from the PPCT model, and from previous empirical research. Our outcome of interest was teachers' perceptions of academic competence, which we wanted to relate to the proximal processes of the everyday activities of children from two social-class groups. First we hypothesized a link between context and proximal processes—namely that children from middle-class backgrounds would engage to a greater extent than their working-class counterparts in the set of activities that we felt were more likely to be related to subsequent academic success ("school-relevant" activities). The second hypothesis related to one parental characteristic ("directive beliefs") that might be expected to be influential in connecting context and proximal processes, namely that middle-class parents would be more likely than working-class parents to positively value self-direction in their children and that there would be a relationship between parental values for self-direction and engagement in this set of school-relevant activities. The third hypothesis involved a link between a developmentally instigative child characteristic (initiation of activities), context, and proximal processes—namely that the children from a middle-class background would be more likely than those from a working-class background to initiate these activities. Finally, the fourth hypothesis related directly to the links between proximal processes and developmental outcome, namely that children of preschool age who were more likely to initiate and engage in these activities would be perceived as being more academically competent by their teachers in the first years of school.

3. Methods

3.1. Participants

We used a community-based approach, in which we selected two small communities that were likely to differ by social-class background of parents. From each community we recruited as many as possible of the families with a child of the relevant age from those families that met our requirement of social-class and racial background. For this study only families of European-American descent were recruited. (The study is part of a broader line of research, involving communities in other societies as well as two African-American communities recruited from the

same city. The longitudinal data collection is only complete in the two groups discussed in this paper.)

Participants consisted of 20 White preschoolers, who ranged in age from 28 to 45 months when the study was started (middle class: mean=36.6 months, *SD*=7.0; working class: mean=36.9 months, *SD*=4.5). They were drawn from two communities in a southeastern city in the United States, and were located in the following manner. "Community" was defined as an area of town bounded on all sides by relatively clear boundaries (major roads, railway line, etc.), with no major roads cutting through the area, relatively small in size (1.5–2 square miles), and judged to be fairly homogeneous in terms of types of housing and racial background. A list was then generated from the birth records of all children born in that area between 2 and 4 years earlier. Letters were sent to all families who appeared still to be living in the area (information derived from the telephone book and/or city records), and were followed by a screening call. In order to participate, the family still had to be living in the area, and had to fit education and occupation criteria. For one community, termed middle class, at least one parent had to have an occupation judged to be professional according to Hollingshead (1975) criteria and both parents had a minimum of a college degree; for the other, working class, community neither custodial parent could have a college degree nor a job deemed professional by Hollingshead criteria.

Table 1. Participants, by social class

Group	Median	Range
Middle-class families		
Family income ($)	70,000[a]	40,000 to >85,000
Hollingshead ranking[b]	8 (administrators)	7–9
Mothers' education	Baccalaureate	Some college to master's degree
Fathers' education	Baccalaureate	Baccalaureate to doctoral degree
Child's age (months)	40	28–45
Working-class families		
Family income ($)	25,000[a]	10,000–40,000
Hollingshead ranking[b]	4 (skilled manual)	2–5
Mothers' education	Some college	High school to some college
Fathers' education[c]	High school	Some high school to some college
Child's age (months)	36	32–45

[a] These figures under-represent the families' actual income. Parents were asked to respond to a range of incomes (less than $10,000, $10,000–$14,999, etc.) and these figures represent the bottom of the range.
[b] The Hollingshead (1975) rankings exclude the six middle-class mothers and the one working-class mother who did not work outside the home.
[c] One divorced non-custodial father had a college degree.

Of the 28 families contacted in the middle-class community, 10 declined to participate, 7 were willing to participate but did not meet our requirements, and 11 participated. Of the 18 families contacted in the working-class community, 4 declined to participate, 5 were willing to participate but did not meet our requirements, and 9 participated. Full details about the children's ages, families' incomes, educational levels, and occupational rankings are provided in Table 1. All but one of the children lived with two parents (biological or step-parent) and the working-class child who lived only with her mother spent some time each week with her father. Families varied in terms of the number of children, from a single child (the target of our study) in six cases (three from each group) to five children (one of the middle-class families). Two of our target children (one from each group) were eldest siblings, and the remaining were younger siblings. Families

that were unwilling to participate were, by definition, similar to those who participated in terms of neighborhood, education, and occupational status. The main reason given for unwillingness was the degree of intrusiveness of the observations.

The two sets of families were designed to be clearly different from one another, and so they were in terms of neighborhood, housing, income, occupation, and education. They also differed in terms of use of child-care facilities; 9 of the 11 middle-class children were in part-time child-care (the other two attended a child-care center full time), whereas only 3 of the 9 working-class children were in a child-care center part time, 4 attended a center full time, and 2 were not in any type of center (one was looked after by a grandmother, and the other was at home with parents who both worked night shifts and whose grandmother was with her at night). This differentiation reflected our view that social class is a multifaceted phenomenon, one that cannot be simply reduced to any one of its components (Hoff et al., 2002). The percentage of families who wished to participate was high, given the intrusiveness (20 hours of observation of each child) of the study (64% of the middle-class families and 78% of the working-class families).

Over the 4 years of the study, two families moved out of the city (one to the other side of the country), although we were able to retain both families. However, some attrition did occur and some families and some teachers chose not to participate for one or both of the subsequent waves of data collection. We have complete data on 10 of the middle-class children and 7 of the working-class children at Wave 2 and on 8 of the middle-class and 8 of the working-class children at Wave 3.

4. Methods

4.1. Observations

The children were observed during Wave 1 of this study. Families were asked to keep their daily routines unchanged as much as possible during the observation period. Each child was observed, wherever he or she was situated (home, child-care center, at friends' homes, in public spaces such as shops, parks, etc.), for 20 hours over the course of 1 week (the final 2 hours were videotaped, rather than coded live, and therefore only the first 18 hours of observation feature in these analyses). Observation times were set by the observer in such a way that the equivalent of one entire waking day was covered. One observation period was scheduled starting from before the child woke, another period scheduled for the end of day, and the remaining periods spread over the remaining hours. Observations were continuous in 2–4-hour blocks, but activities were only coded during 30-second "windows" every 6 minutes, using modified spot observations. We used this variety of time sampling to capture what occurred during a specific period of time, while using information from that period or an earlier time to code how, and by whom, activities were initiated. The remaining time (5.5 minutes) was long enough for observers to code and write field notes, while allowing them to observe how activities were initiated and how children became involved in them. During each 30-second window activities were coded as being "available to" the child if they occurred within his or her ear- or eye-shot. Children were coded as being "involved in" the activities if they were physically participating (e.g., playing a game or engaging in conversation) or were observing (e.g., watching others play or listening to others talking). As well as observing which activities were available to the child and which he or she

became involved in, we coded how activities were initiated and by whom, the manner in which the child became involved in any activity, any partners in activity, their respective roles, and so on. A full list of activities, and their definitions, is included in Table 2. It was possible for a child to be involved in more than one activity simultaneously, and each activity, including initiation, partners, etc., could be coded.

Table 2. Activities

Lessons	Deliberate attempts to impart or elicit information relating to:
Academic	School (spelling, counting, learning shapes, colors, etc.)
Skill/nature	How things work, why things happen
Interpersonal	Appropriate behavior with others, etiquette etc.
Religious	Religious or spiritual matters
Work	Household activities (cooking, cleaning, repairing, etc.), shopping, etc.
Play, entertainment	Activities engaged in for their own enjoyment, including:
Academic	Play with academic object (looking at a book, playing with a calculator, etc.), with no lesson involved
Role-play	Play involving evidence that a role is being assumed, whether prosaic (mother shopping), mythical (super-hero), or object (animal)
Toys	Objects designed specifically for children, such as toys
Other play	Objects designed not for children, such as household objects, natural objects, or no object at all (rough and tumble, chase)
TV, entertainment	Watching TV, listening to radio, going to a ball-game, circus, etc.
Conversation	Talk with a sustained or focused topic about things not the current focus of engagement:
Adult	Conversation involving at least one adolescent or adult (someone clearly much older than the focal child)
Child	Conversation only involving children
Other	Activities such as sleeping, eating, bathing, etc. and those that were uncodable

In addition to documenting similarities and differences in children's everyday activities, we wished to identify variability in those activities that might be relevant to later academic competence. Accordingly, we examined with particular interest the academic and skill/nature lessons in which children were involved, their play with academic objects, and their conversation with adults. We defined lessons as explicit attempts to impart or elicit information in the area of literacy, math, colors, etc. (academic lessons) or about how things work (such as how the oven cooks things) or why things happen (e.g., why leaves fall from the trees) (skill/nature lessons). We defined play with academic objects as playing with (or exploring or being entertained by) such things as books, shapes or other things that appear to have academic relevance, without any explicit lesson. Conversation, following Sigel (1982) and Hart and Risley (1995), was defined as talking about something that was not part of the on-going activity. Although learning is likely to occur from any activity in which a young child engages, of all the activities that we coded, these two types of lessons, playing with an academic object, and conversation with adults were believed to be the most "school-relevant."

Observers paid particular attention during the entire observational period to the initiation of activities; children were coded as initiating an activity when they were clearly involved in starting it (picking up a book to look at it, an example of play with an academic object, or asking a question about how something works, an example of a skill/nature lesson).

The coding scheme was developed by the first author in conjunction with the two European-American females who collected the data, working individually with separate families. Training involved live observations of children from families with a child of the appropriate age and from videotapes of these children, with discussion of disagreements until agreement was reached. Reliability was assessed both before data collection and during data collection, using videotapes. Coders had to attain (and retain) a minimum of 75% agreement on all codes. The range for activities and initiation of activities was from 78 to 90%, with a mean of 85.4%.

4.2. Parents' child-rearing values

After the children had entered formal school, approximately 3 years later (Wave 2), parents completed Kohn's (1977) Q-Sort measure of parental values. Each parent, separately, was asked to rate the three most and three least important qualities for their child from a list of 13. Kohn identified these as the most commonly valued characteristics that parents had for their children. Of these six, the parent was asked to choose the most valued and least valued. Of the 13 values, 5 relate to self-direction ("is interested in how and why things happen," "is considerate of others," "is responsible," "has self-control," and "has good sense and sound judgment"), 4 to conformity ("has good manners," "obeys parents well," "is neat and clean," and "is a good student"), and 4 "filler" items are not related to either (e.g., "gets along well with other children") (Kohn, 1977). A self-direction score was computed by summing the scores for the six values chosen, in the following fashion. All filler items were scored 3. For the remaining values, the most-liked value was scored 5, the two liked values scored 4, the two not liked values scored 2, and the least-liked value scored 1. Conformity items were reverse scored. A higher score on this scale represents a higher value for self-direction compared to conformity, with possible scores ranging from a low of 10 to a high of 26. Kohn (1977; Kohn & Slomczynski, 1990) supported the self-direction construct with factor analysis, using large data sets for this purpose. In this study, the interviewers were not the same people as those who had collected the observational data, and were blind as to the children's engagement in activities.

4.3. Teachers' perceptions of academic competence

Approximately 3 years (Wave 2) and 4 years (Wave 3) after the children had been observed, their teachers completed the teacher form of the Social Skills Rating Scale-Teacher Form (SSRS-T, Gresham & Elliot, 1990), including the sub-scale measuring academic competence (the sub-scale used in this paper). The sub-scale includes nine items that ask teachers to rate, on a 5-point scale, the child's overall academic performance, ability in reading and mathematics, intellectual functioning, and overall classroom behavior (all compared to others in the classroom), reading and mathematics ability in terms of "grade level expectation," and the child's motivation and parental encouragement to succeed. As is true of the SSRS as a whole, the internal consistency of this sub-scale is high, according to the authors (coefficient α=0.95), as is the test–retest reliability (r=.93; tests taken 4 weeks apart). In this study, the internal consistency was somewhat lower (coefficient α=0.85) but still acceptable. The academic competence sub-scale of the SSRS-T has moderately high correlations with three other widely used tests, the Social Behavior Assessment (r=−.67), the Child Behavior Checklist (r=−.59), and the Harter Teacher Rating Scale (r=.63) (Demaray et al., 1995). The sub-scale also has moderately high correlations with the Teacher Rating of Academic Performance across grades 1–5 (range .45–.62), which in turn has

moderately high correlations with the Wechsler Intelligence Scale for Children-Revised (.52–.61) (Elliott, Gresham, Freeman, & McCloskey, 1988). The teacher data were collected by a researcher who had neither been involved in the observations nor in the parental interviews.

5. Analyses

This research used a community-based design, involving all eligible and willing participants from two neighborhoods from one medium-sized city from the southeast of the United States. These are, in effect, two small populations rather than samples from wider populations. Technically-speaking, therefore, inferential statistics are not appropriate, as they infer from samples to the populations from which the samples were drawn. Our use of non-parametric inferential statistics (Mann–Whitney U and Spearman Rho) should not, therefore, be taken to indicate a belief that our findings are generalizable to any specific larger population. However, the manner of recruitment means that our findings may not be dissimilar to those that we might have found had we studied other families of similar backgrounds in similar contexts. We used non-parametric tests involving rank ordering to minimize the possible effects of outliers (Siegel, 1956), a potential problem given the small numbers of participants who were involved.

6. Results

6.1. Activities coded

Before discussing the specific hypotheses, some information is necessary about the numbers of observations and activities. A total of 3,565 observations were taken at Time 1 of these 20 preschoolers, 1,965 of the middle-class group (mean=178.6, SD=10.7) and 1,600 of the working-class group (mean=77.8, SD=4.3). Because we coded all activities that occurred in the child's immediate vicinity (irrespective of the child's involvement) and because during the 30-second period a child could be involved in more than one activity, a total of 5,505 activities were coded (not counting those activities when the child was asleep): 2,944 for the middle-class group (mean=267.6, SD=20.1) and 2,561 for the working-class group (mean=284.6, SD=8.9). We followed the children wherever they were situated, and so the activities took place in a variety of settings—although, for both groups, most observations took place in and around the home (middle class: mean=119.4, SD=34.7; working class: mean=118.2, SD=26.6). The remaining observations took place either in some type of child-care setting (middle class: mean=25.0, SD=34.5; working class: mean=36.6, SD=29.7) or in another type of setting, such as friends' or relatives' house, or in a public space such as shops or parks (middle class: mean=33.3, SD=35.3; working class: mean=25.0, SD=18.4).

In this paper we focus on the set of four school-relevant activities noted earlier (academic and skill/nature lessons, play with academic objects, and conversation with adults). As hypothesized (Hypothesis 1), as preschoolers the middle-class children were more likely than their working-class peers to be involved in this set of activities (middle class: mean=40.72, SD=14.16; working class: mean=23.22, SD=8.51, U=14.5, z=2.66, $p<.01$). Because our hypotheses were directional, we have reported one-tailed levels of significance. As is clear from Table 3, when examining the four activities separately, the middle-class children were more likely to be involved in each of these activities than were the working-class children. However, the clearest difference between

the groups was that middle-class children were far more likely to engage in conversation than were working-class children.

Table 3. Engagement in activities, by social class

Group	Academic lessons	Skill/nature lessons	Play with academic objects	Conversation with adult(s)	Total of all activities
Middle class (11)	3.73 (4.43)	4.64 (3.14)	9.45 (7.35)	23.0 (1.7)	40.82 (14.16)
Working class (9)	1.22 (1.56)	2.78 (1.48)	6.56 (6.19)	12.67 (5.17)	23.22 (8.51)
Mann–Whitney U	$p < .3$	$p < .3$	$p < .2$	$p < .05$	$p < .01$

Some examples of conversations include the following. "Andy" (a middle-class boy) is taking a bath, being helped by his mother. Before the observational window opened, they had been talking about childproof caps, and why it was important so that babies couldn't get medicines. As the window opens, they are talking about a girl who has got chicken pox and whether or not Andy is now going to get it. "Brian" (another middle-class boy) is eating oatmeal with his mother at breakfast, talking about a trip that they had been on that past summer. "Cathy" (a middle-class girl) is sitting on a couch, drinking juice and reading with her mother. They interrupt the reading (an example of play with an academic object) to talk about a toy. Cathy asks if her mother remembers where and when they got the toy, and then start talking about a wedding they attended at about the same time. "Abigail" (working-class girl) is going to the grocery store with her mother, where the latter meets a friend with whom she talks about her new job and the pastor at church. All the time Abigail is listening intently, but does not participate more actively in the conversation. These are all examples of talking about things not going on in the here and now and, particularly in the case of the middle-class children, are ways of linking between the children's current experiences and other parts of their lives.

Why were the middle-class children more likely to be involved in this set of school-relevant activities, particularly conversation? One possibility is that the parents themselves differentially valued engaging their children in conversation, giving them academic lessons, and so on. Our data do not allow a direct test of this, although we did collect data on all but one of the sets of parents regarding their value for self-direction in their children. As discussed above, Kohn, 1977, Kohn, 1995 theory suggests that professional and well educated parents are more likely than those from working-class backgrounds to encourage their children to be self-directive and independent, and this may be fostered by trying to ensure that their children are well prepared to enter and do well in school. As hypothesized (Hypothesis 2), middle-class mothers were more likely to positively evaluate self-direction than were working-class mothers (middle class: mean=21.55, SD=1.74; working class: mean=18.56, SD=2.44, U=13.0, z=2.57, p<.01). In the case of fathers, the scores were in the expected direction, but not significantly different (middle class: mean=20.73, SD=2.84; working class: mean=19.06, SD=2.77, U=23.5, z=1.71, p<.1).

We also tested the extent to which greater valuation of self-direction was related to greater engagement in the activities of interest. As mentioned above, we will report one-tailed tests and, to avoid Type II errors, we will also report any non-significant correlations with a "moderate" effect size (r=.3 and above, see Cohen, 1969). Spearman correlations indicated that across the entire sample, mothers and fathers shared similar values (r=.60, p<.01) and children whose parents more positively valued self-direction were more likely to engage in the set of school-

relevant activities (r=.58, p<.01 for mothers, r=.50, p<.05 for fathers). However, parental beliefs about self-direction were related only to academic lessons (r=.47, p<.05 for mothers, r=.58, p<.01 for fathers) and conversation with adults (r=.63, p<.01 for mothers, r=.64, p<.01 for fathers).

Although these analyses indicate a potential mediating link between social class and children's engagement in the school-relevant activities we need to guard against an assumption that there is a unidirectional link from social class and parents' values to engagement in activities. The argument might be that because of parents' social-class background they differentially value self-direction and as a result differentially provide more of these school-relevant activities for their children. An alternative explanation is that children themselves have an active role—not simply in terms of engagement in the activities, but in initiating them, and their parents might as a result value these characteristics. As hypothesized (Hypothesis 3), it was the case that middle-class children were more likely than were those from the working class to initiate this set of activities themselves (middle class: mean=20.18, SD=9.20; working class: mean=10.11, SD=5.88, U=16.0, z=2.55, p=.01). As is seen in Table 4, examining each of the activities separately revealed that although middle-class children initiated each of these activities more than did working-class children, they did so to a significantly greater extent only in the case of conversation.

Table 4. Initiation of activities by children alone or in conjunction with a partner, by social class

Group	Academic lessons	Skill/nature lessons	Play with academic objects	Conversation with adult(s)	All school-relevant activities
Middle class (n = 11)					
Mean	1.36	1.45	5.91	11.45	20.18
SD	2.01	1.75	3.73	7.66	9.20
Working class (n = 9)					
Mean	0.33	0.33	4.11	5.33	10.11
SD	0.71	0.50	4.62	2.45	5.88
Mann–Whitney U	p < .3	p < .07	p < .2	p < .06	p = .01

The final set of analyses relate to the teachers' perceptions of the children's competence once they had entered school, 3–4 years after the observational data had been gathered. The teachers of middle-class children did not evaluate them any higher in terms of academic competence than did the teachers of working-class children. This was the case both at Wave 2 of gathering data, when the children had entered kindergarten or first grade (middle class: mean=36.70, SD=5.83; working class: mean=36.14, SD=3.44, ns) and at Wave 3, 1 year later (middle class: mean=36.12, SD=5.08; working class: mean=36.12, SD=3.42, ns). Despite the fact that the children had each moved to a different teacher, the correlations between perceptions of competence 1 year apart were high (r=.91, p<.001).

Our fourth and final hypothesis was that those children who had engaged in more of these activities would be more likely to be perceived as academically competent by their teachers. The correlations between engagement in the set of school-relevant activities and perception of academic competence at Wave 2 (r=.32) and Wave 3 (r=.40) were in the expected direction, although non-significant, meaning that Hypothesis 4 was not supported. However, the effect

sizes were large enough to warrant looking at each of the activities separately, and it is clear that engagement in conversation as a preschooler did play a significant role in the teachers' perceptions of the children's competence once they had reached school age ($r=.46$, $p<.05$ at Wave 2 and $r=.59$, $p<.01$ at Wave 3). The initiation of this set of activities also did not correlate significantly with teachers' perceptions of competence. However, children who had initiated more academic lessons as a preschooler were somewhat more likely to be perceived as being competent at Wave 3 ($r=.31$) and those who had initiated more conversation with adults were significantly more likely to be perceived as competent in their first years of school ($r=.49$, $p<.05$ at Wave 2 and $r=.67$, $p<.01$ at Wave 3).

Interestingly, the patterns were different for the middle-class and working-class children. For the former, but not the latter, the correlations between perceived competence and engagement in academic lessons were fairly high although non-significant ($r=.45$, $p<.1$ at Wave 2; $r=.60$, $p<.06$ at Wave 3) whereas the correlations for the working-class children were close to 0 (rs$=-.02$ and $-.07$, respectively). The same was true for initiation of academic lessons ($r=.49$, $p<.1$ at Wave 2, $r=.55$, $p<.1$ at Wave 3 for the middle-class children; $r=-.02$ at Wave 2 and $r=.25$ at Wave 3 for the working-class children). By contrast, the correlations between perceived competence and engagement in conversation were lower for the middle-class children ($r=.36$ at Wave 2, $r=.49$ at Wave 3) than for the working-class children ($r=.67$, $p<.05$ at Wave 2; $r=.86$, $p<.01$ at Wave 3). The same pattern was found for initiation of conversation ($r=.41$ at Wave 2, $r=.60$, $p<.06$ at Wave 3 for middle-class children; $r=.69$, $p<.05$ at Wave 2, $r=.90$, $p=.001$ at Wave 3 for working-class children).

7. Discussion

The aim of this research was to examine the relations among young children's engagement in certain types of naturally occurring activities, their parents' values, and teachers' subsequent perceptions of the children's competence once they had gone to school. The theoretical foundation was derived from Bronfenbrenner's ecological perspective, using a PPCT design. Unlike other studies that have collected data from much larger samples but that have as a result relied on parental reports or very brief observations, our approach was to try to get a sense of the activities in which children typically engage, how those activities start, and how children become involved in them. Because children may engage in different activities in different settings and at different times of the day, it is not possible to describe typical activities without following them into those different settings and observing them at different times. This approach allowed us to focus on the proximal processes that are so important to development while examining individual characteristics that might make a difference in the activities children engage in, and to do so in two different macrosystems (context).

At the level of the macrosystem we focused on two social-class groups, drawn from families of European-American descent from a single city in the southeast of the United States. Social classes constitute macrosystems, given that they are distinguished in terms of "developmentally instigative belief systems, resources, hazards, life styles, opportunity structures, life course options and patterns of social interchange" (Bronfenbrenner, 1993, p. 25). Given the way in which we located our participants, it was clear from the start that the families differed at least in terms of resources, lifestyles, and opportunities, with the middle-class parents being wealthier,

better educated, and in more prestigious occupations than their working-class counterparts. It is worth stressing, however, that none of our participants could be described as living in poverty—almost all the working-class parents had completed high school and they were all employed outside the home.

Moreover, following Kohn, 1977, Kohn, 1995, our data revealed that the values of the two groups were also distinguished in terms of the importance of self-direction for their children. If education and occupation are the major distinguishing characteristics of groups that are differentiated by position in the social stratification system, then the opportunities for self-direction that are afforded both by engaging in higher education and by working at a job that encourages self-direction may constitute the mediating link between macrosystem (social class) and microsystem (e.g., the home).

How are the values or belief systems put into effect by members of different macrosystems? This question addresses two issues. The first issue concerns the links between social class and behavior. The second deals with the role of "developmentally instigative" personal characteristics, in this case parents' directive beliefs. These beliefs, according to Bronfenbrenner, should relate to proximal processes, or the typical ways in which people deal with others in their settings. Proximal process is the part of the PPCT model that is least often the focus of attention by developmentalists, even though it is most crucial. In this study we were particularly interested in the group of activities that we predicted would most likely relate to subsequent competence in school. We found that, as predicted, middle-class children were, on average, more likely to engage in these school-relevant activities than were their working-class counterparts, particularly so in the case of conversation with adults.

From a PPCT perspective, however, it is also necessary to take into account at least one aspect of how the developing person influences proximal processes. In this study we examined parental values, and found that those parents who were more likely to value self-direction in their children had children who engaged in more of these types of activities. Thus it is possible to draw links among social class, values, and activities. However, these links are compatible with a purely unidirectional model of development. We were therefore interested in one developmentally instigative characteristic of the children themselves. The characteristic that we chose to focus on was the children's self-directedness, assessed as their initiation of the activities of interest. Why do children become involved in activities? Partly because they are in settings in which these activities are made available—adults provide children information about things related to school, about how to do things, or why the natural world works as it does, they provide objects such as books or computers, and they engage children in conversation. But children become involved also because they are actively trying to make sense of their world—they ask questions about school-relevant things, about how some object works, they pick up a book to read, and they engage adults in conversation.

In this study it was clear that these groups of children were differentiated in terms of the extent to which they initiated these activities, with the middle-class children doing so to a greater extent than their working-class peers, particularly so in the case of conversation. This was perhaps not a surprising finding—their parents, we already know, were more likely to value self-direction. It is

not the case that we wish to argue that middle-class children are born more self-directing, but that they exist in settings that are more encouraging of greater self-direction.

Nonetheless, some children, it is clear, were more involved in these types of activities (and initiated them) to a greater extent than did other children. The significance of this cannot be overemphasized. We have no data that would explain such differences—data derived from the first months of life would have helped us understand about such temperamental characteristics as activity level, and data derived from the parents prior to the birth of these children would have helped provide a sense of the parents' values and beliefs that were not affected by their knowledge of the child. However, the differences in initiation of and involvement in these activities appears critical when examined in the light of the final element of the PPCT model—time.

If, as Bronfenbrenner has argued, proximal processes are the "engines of development" then their developmental effects can only be assessed over time. Our prime developmental hypothesis was that differential initiation of and engagement in these activities when the children were of preschool age would be reflected in differential perceived competence in the early school years. It was not the case that teachers perceived the middle-class children to be, in general, more competent than their working-class peers. Nor was it the case that children who had initiated and engaged in more school-relevant activities were perceived as significantly more competent than those who had engaged in fewer. However, when examining each of the activities separately it was clear that the teachers perceived children who had both initiated and engaged in more conversation with adults as more competent.

It thus may be the case that giving children explicit lessons (whether of an academic nature or related to skills or the natural world) or providing objects of academic relevance (books, blocks with numbers, certain types of games that supposedly encourage the attainment of academic skills) and having children play with them is not particularly useful as a means for developing academic competence, compared to the benefits of engaging with them in conversation. Our findings thus complement those reported by Hart and Risley (1995) who showed that working-class children engage in conversation with adults to a lesser extent than do middle-class children, and that these differences are clearly implicated in the children's differential trajectories once they have entered school. Moreover, given our definition of conversation (talking about things that are not happening at present), these data support Sigel's view of the importance of distancing strategies (Sigel, 1982, Sigel et al., 1993).

It is of course true that the differences in the numbers of observations in which children from the two social classes were engaged in conversation were not great. It is important to recognize, however, that these data were derived from a total of 90 minutes of observations for each child (180 observations, each of 30 seconds), sampled every 6 minutes for a total of 18 hours. There is thus every reason to expect that these differences in engagement might be repeated, on average, every 90 minutes over the entire 18 hours. As Hart and Risley (1995) reported, relatively small differences, often repeated, have a profound impact on children's lives.

In support of this view, many of the correlations between preschool activities and competence in school were rather large, ranging from .45 to .6 in the case of middle-class children's initiation of

and engagement in academic lessons and conversation, and from .67 to .9 in the case of working-class children's initiation of and engagement in conversation. Some of these correlations were not significant, because of the small numbers of participants involved, and resulting loss of power. However, because these data were based on a great deal of observation in the everyday settings in which these children were situated, the findings should at least be thought of as suggestive of the fact that what happens on a regular basis in the years before children enter school can have an impact on their teachers' perceptions of their competence 3 and 4 years later.

The major limitation of this research, resulting from the in-depth nature of the observations, lies in the small number of participants. For this reason, some caution must be expressed about the generalizability of these data. The approach that we took was to gather participants not at random but from two particular communities that were each relatively homogeneous in terms of race and housing, and recruit as many as possible of the families that met our requirements (specifically education and occupation). Is it possible to generalize from these particular families? Not in a statistical sense. However, we satisfied our goal of including in the study a large majority of all families who met our requirements in the two communities we selected, and did not rely on other techniques that might encourage a self-selection bias (responding to newspaper announcements, as in Dunn, 1988, or a combination of newspaper announcements, participation in on-going research, and attending one of five child-care centers, as in Carew, 1980 and Carew, Chan, & Halfar, 1976). There is thus no obvious reason for concluding that these two groups of participants might differ dramatically from other groups of families of the same racial or ethnic background, living in similar circumstances (from the same socioeconomic backgrounds, e.g., living in similar sized cities) from other parts of the United States.

Moreover, research involving large numbers of participants is unlikely to gather the type of rich assessment of everyday proximal processes that features in this study. As is typical in this field, studies that rely heavily on observations involve far fewer participants than studies that involve, for example, parents' responses to surveys or answers in interviews. The process of being observed may, of course, change in some ways the types of activities in which children are involved, who interacts with the children, the roles taken, and so on (Tudge & Hogan, in press). However, this is far less likely to occur when observations go on over an extended period of time, rather than in brief sessions. The method we used allowed the time for all participants to became acclimated to the observer's presence, and the children in this study provided no evidence that their parents and others who interacted with them were behaving in unusual ways.

The method used here provides a rich description of the various activities in which children engage, their manner of involvement, and the people who are involved with the children. The importance of the method goes far beyond the descriptive, however. If researchers are to take seriously ecological and contextual theories, such as those of Bronfenbrenner, it is essential to have a means of operationalizing concepts such as those involved in a PPCT model. In this paper we have shown how such operationalization can be accomplished. In the process, we have suggested that children of preschool age who both initiate and engage in activities that involve interaction with adults are more likely to be perceived as competent by their teachers in the first years of school. Given our knowledge of the continuing effects of early teacher perceptions, it seems clear that children's differential engagement in these activities may have significant long-term effects on their performance.

8. Implications for practice

The importance for children of the entrance to school has been widely recognized. Cowan and his colleagues (Cowan et al., 1994) term it a "critical period" while Alexander and Entwisle (1988) talk about the "achievement trajectories" children find themselves on in their first years of school. It is therefore surprising that so little research has adopted a developmental perspective, focusing on what typically occurs in the years prior to school that helps children deal more effectively with this transition. Most of the research that has dealt with issues of school achievement focuses on variables such as race, social class, poverty, divorce (typically assessed as "social address" variables, Bronfenbrenner, 1989), parental beliefs or attitudes about school and achievement, or parent–child interactions assessed by either self-report measures or short-term observations in the laboratory or home. We have argued, by contrast, that it is important to study the typically occurring types of activities in which children are engaged with their main social partners in the years before school in order to better understand the implications of early experiences for school transitions and achievement.

Our data show clearly the links between initiation of and engagement in conversation when the children were of preschool age and their teachers' subsequent perceptions of their competence. These findings are important for two reasons. First, they have implications for the teachers who deal with children making the transition to school. We have long known that good home–school connections help foster children's school success. However, these connections may be valuable not simply as a way of involving the parents in their children's schooling, but also to help teachers be more aware of the types of experiences children have had in the years before the children arrive in school, particularly the ways in which they have typically interacted with adults. Good teaching, after all, is enhanced when teachers learn about the strengths and weaknesses children bring with them to school (Scrimsher & Tudge, in press). Teachers can then ensure that those children who have had fewer opportunities to engage in conversation with adults are provided with those opportunities.

These findings also point to the potential importance of educating parents about the role that adult–child interactions play in facilitating the transition to school and subsequent achievement. We found that there was no relationship between children playing with academically relevant objects and their teachers' perceptions of their competence. This has implications for parents who think that providing their children with these types of toys and games is necessarily going to help their children be successful in the early years of school. We also did not find any support for the idea that working-class children who received more math- or literacy-related lessons were viewed as being more academically competent when in school, although these lessons were more helpful for middle-class children. However, preschoolers from both middle- and working-class backgrounds who engaged in conversation with adults were perceived as being more competent by their teachers 3 and 4 years later. Parents should be aware of findings such as these, as a way of encouraging them to spend more time engaging and talking with their young children, or to ensure that their children are in situations in which they will be enabled to talk with adults. The transition to school may not easy, but it is nice to know that the path can be made a little smoother by simply talking with children.

Acknowledgements

References

Alexander, K. L., & Entwisle, D. R. (1988). Achievement in the first two years of school: Patterns and processes. *Monographs of the Society for Research in Child Development*, *53* (2, Serial No. 218).

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52*, 1–26.

Baumrind, D. (1989). Rearing competent children. In W. Damon (Ed.), *Child development today and tomorrow* (pp. 349–378). San Francisco, CA: Jossey-Bass.

Block, J. H., & Block J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In W. A. Collins (Ed.), *Development of cognition, affect, and social relations. Minnesota Symposium on Child Psychology* (Vol. 13, pp. 39–101). Hillsdale, NJ: Erlbaum.

Bradley, R. H., & Caldwell, B. M. (1979). Home observation for measurement of the environment: A revision of the preschool scale. *American Journal of Mental Deficiency*, *84*, 235–244.

Bradley, R. H., Caldwell, B. M., & Rock, S. L. (1988). Home environment and school performance: A ten-year follow-up and examination of three models of environmental action. *Child Development*, *59*, 852–867.

Bradley, R. H., Corwyn, R. F., Burchinal, M., McAdoo, H. P., & Coll, C. G. (2001a). The home environments of children in the United States, Part II: Relations with behavioural development through age thirteen. *Child Development*, *72*, 1868–1886.

Bradley, R. H., Corwyn, R. F., McAdoo, H. P., & Coll, C. G. (2001b). The home environments of children in the United States, Part I: Variations by age, ethnicity, and poverty status. *Child Development*, *72*, 1844–1867.

Bronfenbrenner,U. (1958). Socialization and social class through time and space. In E. E. Maccoby, T.M. Newcomb, & E. L. Hartley (Eds.), *Readings in social psychology* (3rd ed., pp. 400–424). New York: Holt, Rinehart and Winston.

Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), *Annals of child development* (Vol. 6, pp. 187–249). Greenwich, CT: JAI Press.

Bronfenbrenner, U. (1993). The ecology of cognitive development: Research models and fugitive findings. In R. Wozniak & K. Fischer (Eds.), *Development in context: Acting and thinking in specific environments* (pp. 3–44). Hillsdale, NJ: Erlbaum.

Bronfenbrenner, U. (1995). Developmental ecology through space and time: A future perspective. In P. Moen, G. H. Elder, Jr., & K. Lüscher (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 619–647). Washington, DC: American Psychological Association.

Bronfenbrenner, U. (1999). Environments in developmental perspective: Theoretical and operational models. In S. L. Friedman&T.D.Wachs (Eds.), *Measuring environment across the life span: Emerging methods and concepts* (pp. 3–28). Washington, DC: American Psychological Association Press.

Bronfenbrenner, U., & Ceci, S. (1994). Nature-nurture reconceptualized in developmental perspective: A bioecological model. *Psychological Review*, *101*, 568–586.

Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. InW. Damon & R.M. Lerner (Eds.), *Handbook of child psychology, Vol. 1: Theoretical models of human development* (pp. 993–1028). New York: Wiley.

Burchinal, M. R., Campbell, F. A., Bryant, D. M., Wasik, B. H., & Ramey, C. T. (1997). Early intervention and mediating processes in cognitive performance of children of low-income African American families. *Child Development*, *68*, 935–954.

Caldwell, B. M., & Bradley, R. H. (1984). *Home observation for measurement of the environment*. Little Rock, AK: University of Arkansas.

Campbell, F. A., & Ramey, C. T. (1994). Effects of early intervention on intellectual and academic achievement: A follow-up study of children from low-income families. *Child Development*, *65*, 684–698.

Carew, J. V. (1980). Experience and the development of intelligence in young children at home and in day care. *Monographs of the Society for Research in Child Development*, *45* (6–7, Serial No. 187), 1–89.

Carew, J. V., Chan, I., & Halfar, C. (1976). *Observing intelligence in young children: Eight case studies*. Englewood Cliffs, NJ: Prentice-Hall.

Caspi, A., Elder, G. H., Jr., & Bem, D. J. (1987). Moving against the world: Life-course patterns of explosive children. *Developmental Psychology*, *23*, 308–313.

Christenson, S. L. (1999). Families and school: Rights, responsibilities, resources, and relationships. In R. C. Pianta & M. J. Cox (Eds.), *The transition to kindergarten: Research, policy, training, and practice* (pp. 143–178). Baltimore, MD: Paul Brooks.

Cohen, J. (1969). *Statistical power analysis for the behavioral sciences*. New York: Academic Press.

Cooper, H. M. (1979). Pygmalion grows up: A model of teacher expectation communication and performance influence. *Review of Educational Psychology*, *49*, 577–579.

Cowan, P. A., Cowan, C. P., Schulz, M., & Heming, G. (1994). Prebirth to preschool factors in children's adaptation to kindergarten. In R. D. Parke & S. G. Kellam (Eds.), *Exploring family relationships with other social contexts* (pp. 75–114). Hillsdale, NJ: Erlbaum.

Csikszentmihalyi, M., & Rathunde, K. (1998). The development of the person: An experiential perspective on the ontogenesis of psychological complexity. In W. Damon (Series Ed.) & R. M. Lerner (Vol. Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (5th ed., pp. 635–684). New York: Wiley.

Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin*, *113*, 487–496.

Demaray, M. K., Ruffalo, S. L., Carlson, J., Busse, R. T., Olson, A. E., McManus, S. M., & Leventhal, A. (1995). Social skills assessment: A comparative evaluation of six published rating scales. *School Psychology Review*, *24*, 648–671.

Doucet, F. (2000). *The transition to school in middle class and working class African American families: A study of beliefs, values, and practices*. Doctoral dissertation, University of North Carolina at Greensboro.

Douglas, J.W. B. (1964). *The home and the school: A study of ability and attainment in the primary school*. London, England: McGibbon & Key.

Dunn, J. (1988). *The beginnings of social understanding*. Cambridge, MA: Harvard University Press.

Eccles, J. S., & Harold, R. D. (1996). Family involvement in children's and adolescents' schooling. In A. Booth & J. F. Dunn (Eds.), *Family–school links: How do they affect educational outcomes?* (pp. 3–34). Mahwah, NJ: Lawrence Erlbaum Associates.

Elder, G. H., Jr. (1974). *Children of the great depression*. Chicago, IL: University of Chicago Press.

Elder, G. H., Jr. (1998). The life course as developmental theory. *Child Development*, *69*, 1–12.

Elliott, S. N., Gresham, F. M., Freeman, T., & McCloskey, G. (1988). Teacher and observer ratings of children's social skills: Validation of the Social Skills Rating Scales. *Journal of Psychoeducational Assessment*, *6*, 152–161.

Entwisle, D. R., & Alexander, K. L. (1993). Entry into school: The beginning school transition and educational stratification in the United States. *Annual Review of Sociology*, *19*, 401–423.

Entwisle, D. R., & Alexander, K. L. (1999). Early schooling and social stratification. In R. C. Pianta & M. Cox (Eds.) *The transition to kindergarten: Research, policy, training, and practice* (pp. 13–38). Baltimore, MD: Paul Brooks.

Epstein, J. (1996). Advances in family, community, and school partnerships. *New Schools, New Communities*, *12*(3), 5–13.

Ford, D. H., & Lerner, R. M. (1992). *Developmental systems theory: An integrative approach*. Newbury Park, CA: Sage.

Goodnow, J., & Collins, W. A. (1990). *Development according to parents: The nature, sources, and consequences of parents' ideas*. Hillsdale, NJ: Erlbaum.

Göncü, A. (Ed.) (1999). *Children's engagement in the world*. New York: Cambridge University Press.

Graue, E. (1999). Integrating diverse perspectives on kindergarten contexts and practice. In R. C. Pianta & M. J. Cox (Eds.), *The transition to kindergarten: Research, policy, training, and practice* (pp. 109–142). Baltimore, MD: Paul Brooks.

Gresham, F. M., & Elliot, S. N. (1990). *The social skills rating system.* American Guidance Service, Inc., MN: Circle Pines.

Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Educational Psychology*, *81*, 143–154.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experiences of young American children*. Baltimore, MD: Brookes Publishing.

Hauser, R. M. (1994). Measuring socioeconomic status in studies of child development. *Child Development*, *65*, 1541–1545.

Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms*. New York: Cambridge University Press.

Hoff, E., Laursen, B., & Tardif, T. (2002). Socioeconomic status and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting, Vol. 2: Biology and ecology of parenting* (2nd ed., pp. 231–252). Mahwah, NJ: Erlbaum.

Hollingshead, A. B. (1975). *Four factor index of social status* (Working paper). New Haven, CT: Yale University.

Kagan, J. M., & Snidman, N. (1991). Temperamental factors in human development. *American Psychologist*, *46*, 856–862.

Kerckhoff, A. C. (1993). *Diverging pathways: Social structure and career deflections*. New York: Cambridge University Press.

Kohn, M. L. (1977). *Class and conformity: A study in values* (2nd ed.). Chicago: University of Chicago Press.

Kohn, M. L. (1995). Social structure and personality through time and space. In P. Moen, G. H. Elder, Jr., & K. Lüscher (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 141–168). Washington, DC: American Psychological Association.

Kohn, M. L., & Slomczynski, K. M. (1990). *Social structure and self-direction: A comparative analysis of the United States and Poland*. Oxford, England: Basil Blackwell.

Lerner, J. V., & Lerner, R. M. (1983). Temperament and adaptation across life: Theoretical and empirical issues. In P. B. Baltes & O. G. Brim, Jr. (Eds.), *Life-span development and behavior* (Vol. 5, pp. 198–231). New York: Academic Press.

Luster, T., Rhoades, K., & Haas, B. (1989). The relation between parental values and parenting behavior: A test of the Kohn hypothesis. *Journal of Marriage and the Family*, *51*, 139–147.

Meisels, S. J. (1996). Performance in context: Assessing children's achievement at the outset of school. In A. J. Sameroff & M. M. Haith (Eds.), *The five to seven year shift: The age of reason and responsibility* (pp. 410–431). Chicago, IL: University of Chicago Press.

Meisels, S. J. (1999). Assessing readiness. In R. C. Pianta & M. J Cox (Eds.), *The transition to kindergarten* (pp. 39–66). Baltimore, MD: Paul H. Brookes.

Meisels, S. J., Steele, D. M., & Quinn-Leering, K. (1993). Testing, tracking, and retaining young children: An analysis of research and social policy. In B. Spodek (Ed.), *Handbook of research on the education of young children* (pp. 279–292). New York: Macmillan.

Melton, G. B., Limber, S. P., & Teague, T. L. (1999). Changing schools for changing families. In R. C. Pianta & M. J. Cox (Eds.), *The transition to kindergarten* (pp. 179–213). Baltimore, MD: Brookes Publishing.

Palacios, J., & Moreno, M. C. (1996). Parents' and adolescents' ideas on children: Origins and transmission of intracultural diversity. In S. Harkness & C. M. Super (Eds.), *Parents' cultural belief systems: Their origins, expressions, and consequences* (pp. 215–253). New York: The Guilford Press.

Pettit, G. S., Bates, J. E.,&Dodge, K. A. (1997). Supportive parenting, ecological context, and children's adjustment: A seven-year longitudinal study. *Child Development*, *68*, 908–923.

Pianta, R. C., & Cox, M. J. (Eds.) (1999). *The transition to kindergarten*. Baltimore, MD: Brookes Publishing.

Pianta, R. C., Cox, M. J., Taylor, L., & Early, D. (1999). Kindergarten teachers' practices related to the transition to school: Results of a national survey. *Elementary School Journal*, *100*, 71–86.

Pianta, R. C., Rimm-Kaufman, S. E., & Cox, M. J. (1999). Introduction: An ecological approach to kindergarten transition. In R. C. Pianta & M. J. Cox (Eds.), *The transition to kindergarten* (pp. 3–12). Baltimore, MD: Brookes Publishing.

Pianta, R. C. & Walsh, D. J. (1996). *High-risk children in schools: Constructing sustaining relationships*. New York: Routledge.

Plewis, I., Mooney, A., & Creeser, R. (1990). Time on educational activities at home and educational progress in infant school. *British Journal of Educational Psychology*, *60*, 330–337.

Ramey, C. T., & Ramey, S. L. (1999). Beginning schools for children at risk. In R. C. Pianta & M. J. Cox (Eds.), *The transition to kindergarten* (pp. 217–251). Baltimore, MD: Brookes Publishing.

Rimm-Kaufman, S. E., & Pianta, R. C. (2000). An ecological perspective on the transition to kindergarten: A theoretical framework to guide empirical research. *Journal of Applied Developmental Psychology*, *21*, 491–511.

Rimm-Kaufman, S. E., Pianta, R. C., & Cox, M. J. (2000). Teachers' judgments of problems in the transition to kindergarten. *Early Childhood Research Quarterly*, *15*, 147–166.

Rosenthal, R., & Jacobson, I. (1968). *Pygmalion in the classroom: Teacher expectations and pupils' intellectual development*. New York: Holt, Rinehart, & Winston.

Saracho, O. N. (1991). Teacher expectations of students' performance: A review of the literature. *Early Child Development and Care*, *76*, 27–41.

Scrimsher, S., & Tudge, J. R. H. (in press). The teaching/learning relationship in the first years of school: Some revolutionary implications of Vygotsky's theory. *Early Education and Development*, submitted for publication.

Sigel, I. E. (1982). The relationship between parents' distancing strategies and the child's cognitive behavior. In L. M. Laosa & I. E. Sigel (Eds.), *Families as learning environments for their children* (pp. 47–86). New York: Plenum.

Siegel, S. (1956). *Nonparametric statistics for the behavioral sciences*. New York: McGraw-Hill.

Sigel, I. E., Stinson, E. T., & Kim, M.-I. (1993). Socialization of cognition: The distancing model. In R. Wozniak & K. W. Fischer (Eds.), *Development in context: Acting and thinking in specific environments* (pp. 211–224). Hillsdale, NJ: Lawrence Erlbaum Associates.

Smetana, J. G. (1994). Parenting styles and beliefs about parental authority. In W. Damon (Series Ed.) & J. G. Smetana (Vol. Ed.), *New Directions for Child Development, Vol. 66. Beliefs about parenting: Origins and developmental implications* (pp. 21–36). San Francisco, CA: Jossey-Bass.

Super, C. M., & Harkness, S. (1997). The cultural structuring of child development. In J.W. Berry, P. R. Dasen, & T. S. Sarasthwati (Eds.), *Handbook of cross-cultural psychology. Vol.2: Basic processes and human development* (pp. 1–35). Boston, MA: Allyn and Bacon.

Thomas, A., & Chess, S. (1977). *Temperament and development*. New York: Brunner/Mazel.

Tudge, J., Doucet, F., & Hayes, S. (2001). Teoria, método e análise: As interconexões no estudo das crianças e das fam´ılias. [Theory, method, and analysis: Necessary interconnections in the study of children and families]. *Contrapontos: Revista de Educação [Counterpoints: The Journal of Education]*, *1*(3), 11–22.

Tudge, J. R. H.,&Hogan, D. M. (in press). Accessing children's experiences: An ecological approach to observations of everyday life. In S. M. Greene & D. M. Hogan (Eds.), *Researching children's experiences: Approaches and methods*. London, England: Sage.

Tudge, J., Hogan, D., & Etz, K. (1999). Using naturalistic observations as a window into children's everyday lives: An ecological approach. In C. Shehan (Ed.), *Contemporary perspectives on family research, Vol. 1. Through the eyes of the child: Re-visioning children as active agents of family life* (pp. 109–132). Stamford, CT: JAI Press.

Tudge, J. R. H., Hogan, D. M., Lee, S., Meltsas, M., Tammeveski, P., Kulakova, N. N., Snezhkova, I. A., & Putnam, S. A. (1999). Cultural heterogeneity: Parental values and beliefs and their preschoolers' activities in the United States, South Korea, Russia, and

Estonia. In A. Göncü (Ed.), *Children's engagement in the world* (pp. 62–96). New York: Cambridge University Press.

Tudge, J., Hogan, D., Snezhkova, I., Kulakova, N., & Etz, K. (2000). Parents' childrearing values and beliefs in the United States and Russia: The impact of culture and social class. *Infant and Child Development*, *9*, 105–121.

Vernon-Feagans, L. (1996). *Children's talk in communities and classrooms.* Oxford, England: Blackwell. Walker, D., Greenwood, C., Hart, B., & Carta, J. (1994). Prediction of school outcomes based on early language production and socioeconomic factors. *Child Development*, *65*, 606–621.

Whiting, B. B., & Edwards C. P. (1988). *Children of different worlds: The formation of social behavior*. Cambridge, MA: Harvard University Press.

Zill, N. (1999). Promoting educational equity and excellence in kindergarten. In R. C. Pianta & M. J. Cox (Eds.), *The transition to kindergarten: Research, policy, training, and practice* (pp. 67–105). Baltimore, MD: Paul Brooks.