Socialization Mediators of the Relation between Socioeconomic Status and Child Conduct Problems

Kenneth A. Dodge
Vanderbilt University

Gregory S. Pettit
Auburn University

John E. Bates
Indiana University

DODGE, KENNETH A.; PETTIT, GREGORY S.; and BATES, JOHN E. *Socialization Mediators of the Relation between Socioeconomic Status and Child Conduct Problems.* CHILD DEVELOPMENT, 1994, **65**, 649–665. The goal was to examine processes in socialization that might account for an observed relation between early socioeconomic status and later child behavior problems. A representative sample of 585 children (n = 51 from the lowest socioeconomic class) was followed from preschool to grade 3. Socioeconomic status assessed in preschool significantly predicted teacher-rated externalizing problems and peer-rated aggressive behavior in kindergarten and grades 1, 2, and 3. Socioeconomic status was significantly negatively correlated with 8 factors in the child's socialization and social context, including harsh discipline, lack of maternal warmth, exposure to aggressive adult models, maternal aggressive values, family life stressors, mother's lack of social support, peer group instability, and lack of cognitive stimulation. These factors, in turn, significantly predicted teacher-rated externalizing problems and peer-nominated aggression and accounted for over half of the total effect of socioeconomic status on these outcomes. These findings suggest that part of the effect of socioeconomic status on children's aggressive development may be mediated by status-related socializing experiences.

A consistent finding among epidemiological researchers has been the relation between low socioeconomic status (SES) and early-onset conduct problems in childhood (Farrington, 1978, 1991; Patterson, Kupersmidt, & Vaden, 1990; Rutter, 1981). What is less clear is how this relation operates, that is, what the processes are through which SES operates to lead to conduct problems in children. Economic hardship and social disadvantage clearly alter how a child is socialized (Elder & Caspi, 1988; McLoyd, 1989), including factors that affect conduct problems (Patterson, Reid, & Dishion, 1992). The goal of the research reported here is to understand how relative socioeconomic disadvantage operates by examining children's socializing experiences. Six socializing and two social context influences were targeted for inquiry, based on hypothesized correlations between these influences and either SES or conduct problems. The empirical test to be reported is whether these socializing influences at least partially account for the observed correlation between SES and conduct problems.

The first socializing factor examined was harsh disciplinary practices by parents. It has been speculated that low-income mothers may employ harsh disciplinary practices at a high rate because of urgent needs to try to prevent their children from involvement in antisocial activity (either as victims or perpetrators) (Kelley, Power, & Wimbush, 1992). In addition, it may be that

This work was supported by NIMH grant no. 42498 and NICHD grant no. 30572. The authors are grateful to the numerous parents, children, and teachers who participated in this research and to Janice Brown, Jennifer Dyer Harnish, John Kuster, Elizabeth Lemerise, Pam Navatta, Joan Orrell, David Schwartz, Zvi Strassberg, Ernest Valente, and Bahr Weiss. Please address correspondence to Kenneth A. Dodge, Box 86 GPC, Vanderbilt University, Nashville, TN 37203.

[*Child Development*, 1994, **65**, 649–665. 0009-3920/94/6502-0022$01.00]

stress induced by economic disadvantage leads to increased coercive exchanges between parent and child (Pelton, 1978; Steinberg, Catalano, & Dooley, 1981). Paradoxically, Patterson et al. (1992) have described how harsh discipline can promote child aggressive behavior through coercive cycles. Numerous investigators have found that harsh and punitive parenting is associated with child aggressive behavior (e.g., Farrington, 1978). This correlation holds in diverse cultural groups including Native Americans (McCord, 1977), working-class British children (Farrington, 1991), and children in five different countries (United States, Australia, Finland, Poland, and Israel) (Eron, Huesmann, & Zelli, 1991). Thus, it was hypothesized that one process through which relative socioeconomic disadvantage influences the development of conduct problems is through an association with harsh discipline.

A second parental behavior investigated is a lack of warmth toward the child. The stresses of socioeconomic disadvantage may render a parent less attentive to a child's needs and thus less warm toward the child. Patterson, Cohn, and Kao (1989) found that maternal warmth is negatively correlated with SES. Lack of parental warmth has long been known to be associated with child aggression (Olweus, 1980) and appears to operate independently of harshness of discipline (Eron, Walder, & Lefkowitz, 1971). Pettit and Bates (1989) found that positive involvement by the mother predicts child behavior problems independently of the effect of negative discipline. Thus, harsh discipline and maternal warmth may operate as independent mediators of the effect of SES on child outcomes.

Third, children may learn aggressive behavior patterns through observation of aggressive models (Bandura, 1973). Violence is unfortunately readily observed in socioeconomically disadvantaged marital dyads (Gelles, 1980) and neighborhoods (McLoyd, 1990); in turn, observation of adult conflict is known to be associated with both immediate adverse child effects (Cummings, Zahn-Waxler, & Radke-Yarrow, 1981) and long-term child maladjustment (Jouriles, Murphy, & O'Leary, 1989). Therefore, observation of violence is hypothesized as a third mechanism of the influence of relative disadvantage on aggressive development.

Not only may disadvantaged children observe violence, they may live with parents who endorse aggressive values and advocate the use of aggression to solve problems. Ogbu (1981) has suggested that parents desire in their children competencies that meet their culture's unique needs. If a culture is embedded in a constantly threatening environment, then self-defense and the employment of counter-aggression may be adaptive. It is hypothesized that mothers in lower-SES families will endorse aggressive values for their children, which, in turn, will be related to the child's development of aggressive behavior patterns.

Next, two social context effects of economic disadvantage on mothers are hypothesized. One is the influence of stressful life events, such as family deaths, legal problems, and illnesses. Conger et al. (1992) suggest that the major mechanism of effect of economic disadvantage is its action as a stressor. They write that "hardship-induced increases in emotional distress lead to disruptions in both marital and parental behavior (that lead to child maladjustment)" (p. 527). Stressful life events may also influence child conduct problems more directly (DuBois, Felner, Brand, Adan, & Evans, 1992); therefore, this factor was included as a possible mediator of the effect of socioeconomic disadvantage on child behavior problems. Another potential social context effect of socioeconomic disadvantage on mothers is social isolation and the lack of social support (Rutter & Madge, 1976). Parenting in the disadvantaged environment can be a very lonely experience, without the benefits of monitoring, feedback, and encouragement from others. Parental isolation from extended family and the community is associated with physical abuse of the child and other maladaptive parenting (Dumas, 1986). Parental insularity, in turn, is also related to child conduct problems (Patterson et al., 1992; Wahler, 1980).

A seventh process through which relative socioeconomic advantage may blunt aggressive development is the child's early experience with a stable group of well-adjusted, nonaggressive peers. Socioeconomic hardship may lead to frequent changes in day-care and living arrangements that are associated with changes in the peer group to which the child is exposed. A peer group can enhance aggressive development through modeling and reinforcement of aggression, but it can also socialize a child against aggression through friendships (Berndt, 1989), modeling of alternatives to aggression (Strayer & Noel, 1986), and sup-

port (Cauce, Felner, & Primavera, 1982). A stable peer group that provides opportunities for friendship development is hypothesized to act as a protective factor against aggressive development (and the absence of such a peer group is hypothesized to enhance aggressive development).

Finally, socioeconomic advantage may bring cognitive stimulation and support for academic development during the preschool years (operationalized by the presence of many books in the home environment; Wallach & Wallach, 1976), which in turn may protect a child from developing conduct problems that are related to school failure (Coie & Krehbiel, 1984). Thus, it is hypothesized that low SES leads to conduct problems through its effect on cognitive stimulation.

The current study tested five hypotheses concerning the roles of SES and socialization in the development of conduct problems in elementary school. The design was a 4-year, multiple-cohort, longitudinal study of a representative sample of 585 boys and girls from three geographical sites (urban and small town). The prospective nature of this design and independence of data sources provide advantages over previous studies that involved correlations at a single time point and single sources. That is, SES was assessed by objective indicators; socialization variables were assessed by parent report and direct observation by research staff; and child behavior was assessed by classroom teachers and peers up to 4½ years following the assessment of socializing influences. Another advantage is that SES was scored both categorically and continuously, and attention was directed to whether its effects operate exclusively at the lowest end of the continuum (that is, as a categorical variable) or throughout the distribution (as a dimensional variable).

The first hypothesis was that SES (assessed in preschool, when its effects are most crucial; Farrington, 1991) would predict the later onset of externalizing conduct problems. The second hypothesis was that SES would be concurrently related to each of the eight socializing influences described above. The third hypothesis was that each of the eight socializing influences, assessed in preschool, would predict later conduct problems in school. Fourth, it was hypothesized that the socialization variables would account for a significant portion of the effect of SES on conduct problems. That is, socialization would constitute at least a partial description of the process through which low SES operates on aggressive behavior development. Finally, we examined whether these first four hypotheses would hold across gender and race groups and whether the effects of SES would hold even when we controlled for the effects of being raised in a single-parent family. It is known that SES is correlated with single parenthood and that the latter variable by itself might account for some antisocial outcomes in children (Rutter & Madge, 1976; Wahler, 1980). Therefore, the effects of single parenthood were distinguished from the effects of socioeconomic disadvantage through statistical means.

Method

Overview

The subjects in this study have been described by Dodge, Bates, and Pettit (1990). Following recruitment, mothers were interviewed and observed at home in the summer prior to kindergarten. Two research staff visited each home, with one person interviewing the mother and one person interviewing the child. For almost all nonwhite subjects, the staff included at least one nonwhite interviewer. Both staff members observed the mother and child during the visit. Child interview data are not relevant to this report, although child interviewers' observations of parent-child interaction are reported. Children were then assessed at school by teachers and peers in kindergarten and grades 1, 2, and 3.

Subjects

Subjects were recruited in each of two annual cohorts at each of three geographic sites (Nashville, TN; Knoxville, TN; and Bloomington, IN). Within each site, federally subsidized lunch rates and neighborhood housing patterns were used to identify schools that served a high proportion of low-income children and schools that served a range of children. Parents from these schools were recruited at the time of kindergarten preregistration (April preceding the September of matriculation). Parents were approached individually and consecutively by research staff as they registered their child and were asked to participate for pay in a longitudinal study of child development. About 75% of parents agreed to participate. Because about 15% of children at these schools do not preregister, that proportion of subjects was recruited on the first day of school in September through letter or telephone.

In all, 585 children (305 in cohort 1 and 270 in cohort 2; 204 in Nashville, 204 in Knoxville, and 177 in Bloomington) participated, of which 52.0% were male and 18.4% were of minority ethnic background (17.0% African-American and 1.4% other, including Asian and Middle Eastern origins). Of these 585 children, 209 (35.8%) were living in single-parent-headed households at the time of initial data collection. In order to maintain the temporal ordering among variables, subsequent changes in this status were not considered for this report.

Subject Retention

Of the 585 subjects whose parents completed home interviews, 582 (99.5%) were assessed in kindergarten by teachers and/or peers, 551 (94.2%) in first grade, 542 (92.6%) in second grade, and 513 (87.7%) in third grade. Retention did not vary significantly according to SES. Because peer sociometric interview data were available for most of the participating subjects, as well as dropouts and never-participating peers in the same schools as the participants, it was possible to examine whether peer nomination scores for aggressive behavior differed among these groups. In no year did these three groups differ significantly, suggesting that the full sample of participating subjects is representative of the school population in terms of aggressive behavior.

Socioeconomic Status

Family socioeconomic status was assessed during a private interview with the female head of household at home, based on Hollingshead's (1979) Four-Factor Index. These four factors are mother's (or female head's) years of education, mother's occupation (scored according to Hollingshead's scheme, ranging from 0 for unemployed to 9 for professional), father's years of education, and father's occupation. The father's data were included only when the biological father or another adult male partner of the female head lived in the home (64.2% of cases). When no father lived at home, the mother's data were double-weighted to score status, in keeping with Hollingshead's recommendations.

The mean socioeconomic status (SES) score across all subjects was 39.5 (possible range of 8–66), with a standard deviation of 14.1. Categorical groupings were assigned according to Hollingshead recommendations, with 9%, 17%, 25%, 33%, and 16% being classified into the five possible classes (from lowest, or poorest, to highest). All categories were represented at each of the three sites, with percentages as follows: in Nashville, 18%, 18%, 32%, 25%, and 7%, from lowest to highest; in Knoxville, 5%, 16%, 18%, 38%, and 23%, from lowest to highest; and in Bloomington, 3%, 18%, 27%, 30%, and 21%, from lowest to highest. Other information collected during the interview supports the validity of these classifications and provides a description of what it means to be in the lowest socioeconomic class, as displayed in Table 1. Of those children in the lowest class, 90% live in single-parent families (contrasted with 30% for all others), 76% are from ethnic minority backgrounds (contrasted with 13% for all others), 84% live with a parent who is a high school dropout (contrasted with 16% for all others), and 18% live with an illiterate parent (contrasted with 3% for all others). The mothers of these children were, on average, 19.8 years old at the time of the birth of the child (contrasted with 24.0 years for all others). These children

TABLE 1

DEMOGRAPHIC CHARACTERISTICS OF CHILDREN IN EACH SOCIOECONOMIC CLASS

MEASURE	SOCIOECONOMIC CLASS				
	I	II	III	IV	V
n	51	98	144	187	95
% with single parent	90	52*	30*	27*	12*
% minority	76	22*	17*	10*	3*
% with a parent who is a high school dropout	84	49*	22*	5*	0*
% with a parent who is illiterate	18	8	4*	1*	0*
Mean (SD) age of mother at birth of the child	19.8 (3.4)	22.0 (6.1)	22.1 (4.5)	24.5* (4.1)	27.4* (3.7)
Mean (SD) no. of children in the family	3.5 (1.3)	2.6* (1.1)	2.2* (.9)	2.1* (.8)	2.3* (.7)

* Indicates a group that differs significantly from the lowest socioeconomic class at the .05 level.

have an average of 2.5 siblings (contrasted with 1.3 for all others). All of these differences are highly significant ($p < .001$).

Socialization and Social Context Variables

These variables were assessed during the maternal oral and written interview and through direct observation by two home visitors. The 90-min audiorecorded oral interview was led by a trained clinical interviewer and included both open-ended and structured questions about the first year after birth (not considered here) and then each of two eras in the child's life (a period from 12 months of age up to 12 months ago and the past 12 months). The open-ended format was designed to be culturally sensitive and to enable parents to explain their responses in their own words. Questions concerned the child's developmental and childcare history, family stressors, parental behavior, exposure to socializing factors, and current functioning.

Interviewer training consisted of a 4-week period of reading a procedure manual, observing interviews in the home, and conducting interviews with a supervisor present, with feedback and discussion after each session. Interviewers were trained to a reliability in scoring of .80 or higher (percent agreement across all items, using the supervisor's scores as the criterion) before they were allowed to conduct actual interviews. As a separate measure of the reliability of ratings derived from this interview, oral interviews were independently conducted with the father as well as with the mother for all families for which the child's father was present in the home or available and consenting (n = 396, or 67.7% of total). Because so many subjects lacked a father interview, all variables used in analyses were based on the mother interview only. Yet another measure of the reliability of these scores was obtained through independent ratings made by a trained listener of the audiorecords of the interviews. This listener was trained through similar, albeit not as comprehensive, means as the interviewers. This listener coded the responses of 20 randomly selected mothers (280 items), spanning the range of socioeconomic status and time of data collection, so that any drift could be tested. These reliabilities were calculated as the proportion of item responses for which the two independent raters agreed within 1 point and are reported below. No reliability estimates varied systematically across race, socioeconomic groups, or time of data collection.

The written interview consisted of structured instruments about the mother's values, family status, and child behavior. For those mothers who were illiterate or uncomfortable with a written format, questions were read orally. During the entire 2.5-hour home visit, both interviewers had opportunities to observe the mother and child during interaction with each other (upon greeting, during breaks, and at the end). Each interviewer independently completed a postvisit inventory to code these mother-child interactions. This inventory included items adapted from the HOME Scale (Caldwell & Bradley, 1984). From these three sources of information, eight socialization variables were derived, as follows.

Harshness of discipline.—During the oral interview, the mother was asked to respond open-endedly to each of these questions for each era: Who usually disciplined your child? How? Was your child ever physically punished? How often? If physical punishment had been used, how did adults usually spank your child? Do you remember any times when your child was disciplined severely enough to be hurt or to require medical attention? Following these questions, the interviewer paused and privately completed two ratings on five-point scales. The first rating assessed the degree of restrictive discipline received by the child, with points ranging from "nonrestrictive, mostly prosocial guidance" to "severe, strict, often physical." The second scale assessed the interviewer's certainty about whether the target child had been severely harmed, with points ranging from "definitely not" to "authorities involved." These ratings (two ratings for each of two life eras) were averaged to derive the harshness-of-discipline score (coefficient alpha across four ratings = .81; correlation in total scores between ratings from mother interview and father interview = .74; proportion agreement between independent raters of same protocol = .97).

Exposure to violence.—Following the questions listed above for harshness of discipline, the oral interviewer asked these questions: "What kinds of conflicts, arguments, or violence was your child exposed to and aware of during this time (such as shouting, physical fights, pushing, etc.)?" "How about his mother and father?" "How about between others in the home?" "How about outside the home (such as neighbors, at the park, or other family)?" The interviewer then made ratings for the child's exposure to violence outside the parental dyad, with 5

points ranging from "none" to "physical more than once" and the child's exposure to violence and conflict within the parental dyad, with 5 points ranging from "rarely even shout" to "physical more than once." These ratings were averaged to derive an exposure-to-violence score. For single-parent families, only the scores for exposure to violence outside the parental dyad were used, unless the parents were together during the era assessed (alpha across four ratings = .65; mother-father correlation = .64; rater agreement = .87).

Stability of peer group.—At another point in the oral interview, the interviewer asked: "How often was your child with other children (neighborhood kids, at preschool, etc.)?" "What kinds of situations?" "Has your child been around any children you would consider to be aggressive?" "Did your child have any playmates he/she played with a lot?" "Who, and how long were they friends?" "How did your child usually get along when playing with those playmates?" Next, the interviewer completed one rating for "peer group stability and opportunities for friendship development," on a five-point scale from "high turnover, variable" to "stable, familiar group." The ratings for the two eras were averaged to yield a score for peer group stability (alpha across two ratings = .74; mother-father correlation = .72; rater agreement = .76).

Family life stressors.—During the oral interview, the interviewer asked the mother to recall each era and to answer these questions: "What changes or adjustments occurred during this time [prompting from a list including 10 major stressors such as death, divorce, and legal problems]?" "How did these changes affect your child?" Following these questions, the interviewer completed one rating of the extent of stressful, challenging events faced by the child and family, on a five-point scale from "minimal challenge" to "severe frequent challenges." The ratings for the two eras were averaged to yield a score for family life stressors (alpha across two ratings = .64; mother-father correlation = .71; rater agreement = .71).

Maternal social support.—During the oral interview, the interviewer asked the mother: "Did you have chances to get out and do things you wanted?" "In what ways was your spouse or mate helpful to you during this time?" "What friends or relatives were available to you?" "When you wanted a shoulder to cry on, or needed to let off some steam, who, if anyone, did you turn to?" "How were these people or the time you spent with them helpful?" Following these questions, the interviewer completed one rating for the mother's "social contact and sense of having support from others," on a five-point scale from "very isolated" to "very well supported." The ratings for the two eras were averaged to yield a maternal social support score (alpha across two ratings = .85; because this variable assesses maternal perception, fathers' responses are not relevant for determining agreement ratios; rater agreement = .91).

Maternal values regarding aggression.—In writing, the mother completed a 10-item scale called "Culture Questionnaire" that was developed for this study. Items assessed the mother's values regarding the use of aggression to solve problems (e.g., "Sometimes a physical fight might help my child have a better relationship with other children," and "If my child were teased by other kids at school, I would want my child to defend him/herself even if it meant hitting another child"). Mothers responded to each item on a seven-point scale ranging from "definitely disagree" to "definitely agree." In order to ensure that mothers contemplated each item, four items were worded in the opposite direction (e.g., "If I found out my child hit another child, I would be very disappointed, no matter what the reason") and were reversed scored. Also, five filler items were embedded. The 10 items were averaged to yield a score for maternal aggressive values (alpha = .55; because mothers' values were assessed here, fathers' responses are not relevant).

Observed mother warmth to child.—After the home visit, each of the two visitors completed a Post-Visit Inventory that included 47 items and an open-ended essay. Visitors were highly familiar with item content prior to the visit and had been instructed to attend to all family interactions that took place during the 2.5-hour visit. The observer assessed the warmth in the behavior by the mother toward the child by noting the occurrence (occurred = 1; not occurred = 0) of each of six behavioral events. Items were "mother shouts at child" (reverse scored), "mother otherwise expresses overt hostility or annoyance toward child" (reverse scored), "mother speaks to child with a positive tone," "mother expresses a positive attitude when speaking of the child,"

"mother initiates positive physical contact with the child," and "mother accepts positive physical contact from the child." Agreement between the mother interviewer and the child interviewer on the sum of the six ratings was substantial ($r = .51$, $p < .001$). These 12 items (six rated by mother interviewer and six rated by child interviewer) were summed to yield a score for observed mother warmth toward the child (coefficient alpha = .73).

Environmental cognitive stimulation.—In the Post-Visit Inventory, the observers noted: (1) whether or not at least eight books were visible in the home (some varied reading material, moderate quality at least, i.e., no comic books); and (2) whether or not at least two children's books were visible. The sum of the two ratings by the mother interviewer correlated positively with the sum of the two ratings by the child interviewer ($r = .41$, $p < .001$). These four items were summed to yield a score for environmental cognitive stimulation (alpha = .76).

Child Behavior Problems

Teacher ratings.—During the spring of kindergarten and grades 1, 2, and 3, the child's teacher completed the Teacher Rating Form (Achenbach & Edelbrock, 1986), a standard 112-item checklist of child behavior problems. For each item, the teacher was asked to respond 0 if the problem statement is not true for the child, 1 if the statement is somewhat or sometimes true, and 2 if the statement is very true or often true. Sample items are: "gets in many fights," "disobedient at school," and "threatens people." The score used was the Externalizing Behavior Problems *T* Score, consisting of 55 items for girls and 61 items for boys (normed within gender with a national mean of 50 and standard deviation of 10). The 15-day test-retest reliability of the Externalizing Scale is .89, the 2-month stability is .73, and the agreement between teachers and teachers' aides is .59 (Achenbach & Edelbrock, 1986). The authors report high validity as well for a representative sample of children. In order to derive the most reliable teacher-rating score possible, scores were also averaged across the 4 years of data collection using all available data for a child. The internal consistency of this multiyear score was assessed by coefficient alpha and found to be .85 ($p < .001$).

Peer nominations.—Nominations for aggressive behavior were completed by the classroom peers of the subjects, following procedures used by Coie, Dodge, and Coppotelli (1982). Interviews were conducted individually with each classroom peer whose parent consented. During the interview, each peer was asked to nominate up to three classmates who "start fights," three who "say mean things," and three who "get mad even for no reason." Nomination scores were summed across all respondents for each item and then summed across items and standardized within a classroom (to control for classroom size differences). The peer-nomination score was also averaged across all 4 years of data collection. This multiyear score was highly internally consistent, as assessed coefficient alpha (alpha = .86, $p < .001$). The correlations between the peer-rated aggression score and the teacher-rated Externalizing Score were .51 in kindergarten, .56 in grade 1, .57 in grade 2, .60 in grade 3, and .60 for the multiyear scores, all $p < .001$.

Results

Relation between Socioeconomic Status and Child Behavior Problems

As expected, SES assessed during preschool robustly predicted teacher-rated and peer-nominated child behavior problems at school in each of the 4 years assessed. As Table 2 indicates, the mean Externalizing Problem *T* Score within each year decreased linearly with increases in socioeconomic class. Likewise, the proportion of children who received an Externalizing Problems *T* Score in the clinically deviant range (70 or greater) in at least 1 year decreased linearly with increases in socioeconomic class (.20, .17, .10, .06, and .01, for the five classes, respectively), as did the proportion of children receiving an Externalizing Problems *T* Score in the clinical risk range (60 or greater) in at least 1 year (.61, .56, .40, .35, and .21, for the five classes, respectively). Table 2 also indicates that the mean peer-nominated aggression score within each year varied across socioeconomic classes, although the differences were not as consistently linear or as strong. However, the nonlinear components of SES were never significant in any statistical test for either behavior variable. Therefore, for all statistical analyses involving socioeconomic status, the dimensional score (called SES) was used rather than the categorical score (in order to utilize the full extent of variation). The correlations between the SES score and the Externalizing Problems scores were −.30, −.27, −.31, −.34,

TABLE 2

MEAN EXTERNALIZING PROBLEMS *T* SCORES AND PEER-NOMINATED AGGRESSION SCORES FOR EACH SOCIOECONOMIC CLASS, BY YEAR

	SOCIOECONOMIC CLASS				
	I	II	III	IV	V
Externalizing problems *T* score:					
Kindergarten	54.1	54.0	51.1	49.6	47.0
Grade 1	55.9	55.8	53.3	51.5	49.3
Grade 2	57.8	56.9	53.0	51.1	49.1
Grade 3	57.9	56.2	53.4	51.8	48.2
Multiyear average	57.1	55.8	52.5	50.9	48.6
Peer-nominated aggression Z score:					
Kindergarten	−.11	.13	−.09	−.10	−.36
Grade 1	.14	.12	−.13	−.17	−.37
Grade 2	.17	.25	−.14	−.12	−.21
Grade 3	.34	.25	−.19	−.14	−.24
Multiyear average	.24	.15	−.15	−.18	−.27

NOTE.—For Externalizing Problems *T* Score, national mean = 50 and SD = 10. For peer-nominated aggression scores, SD = 1.0.

for kindergarten and grades 1, 2, and 3, respectively, each $p < .001$. The correlations between the SES score and the peer-nominated aggression scores were −.14, −.19, −.17, and −.20, for kindergarten and grades 1, 2, and 3, respectively, each $p < .05$. The correlation between the SES score and the multiyear Externalizing Problems score was −.34, $p < .001$. The correlation between the SES score and the multiyear peer-nominated aggression score was −.20, $p < .001$. Because of the consistency in findings across years and the desire to use the most reliable behavior scores available, all subsequent analyses employed only the two behavior scores averaged across all 4 years.

Relation between Socioeconomic Status and Socialization

As hypothesized, socioeconomic status was significantly related to each of the eight socialization variables. As listed in Table 3, each socialization variable changed linearly with changes in socioeconomic class. This table describes early socialization for children in the lowest socioeconomic class as involving (relatively) a high degree of harsh discipline, exposure to a high rate of violence, low stability in the peer group, a high rate of family stressful life events, low social support for the mother, a mother who endorses aggressive values for her child, little warmth by the mother toward the child, and a lack of cognitive stimulation in the home environment. These features characterize early life for most children in the lowest socioeconomic class.

The correlations between SES and each socialization variable (listed in Table 4) are highly significant (each $p < .001$). Together, these eight variables account for 29% of the variance in SES, $R = .54$, $F(8, 536) = 27.12$, $p < .001$. SES is multivariately determined from these variables, in that five of the eight variables provide unique increments in the prediction of SES, even after controlling for all other socialization variables: for harshness of discipline, beta = −.19, $t = -4.43$, $p < .001$; for exposure to violence, beta = −.12, $t = -2.83$, $p < .01$; for maternal social support, beta = .12, $t = 3.05$, $p < .01$; for mother's aggressive values, beta = −.17, $t = -4.53$, $p < .001$; and for environmental cognitive stimulation, beta = .22, $t = 5.27$, $p < .001$. The increment provided by stability of the peer group was marginally significant, beta = .08, $t = 1.93$, $p < .06$.

Relation between Socialization and Child Behavior Problems

The correlations between the eight socialization variables and the two multiyear child behavior scores are listed in Table 4. Seven of the eight socialization variables were significantly related to the multiyear teacher-rated Externalizing Problems score. The socialization variables as a set accounted for a significant portion of the variance in Externalizing Problems, $R = .34$,

TABLE 3

MEAN (Standard Deviation) SOCIALIZATION SCORES FOR EACH SOCIOECONOMIC CLASS

VARIABLE	SOCIOECONOMIC CLASS				
	I	II	III	IV	V
Harshness of discipline (scale of 1 to 5; 5 high)	2.64 (.56)	2.43 (.66)	2.11 (.60)	1.90 (.63)	1.87 (.62)
Exposure to violence (scale of 1 to 5; 5 high)	2.53 (.97)	2.31 (.84)	1.93 (.75)	1.70 (.63)	1.70 (.59)
Peer stability (scale of 1 to 5; 5 high)	3.48 (.78)	3.43 (1.02)	3.63 (.89)	3.76 (.88)	4.11 (.70)
Life stressors (scale of 1 to 5; 5 high)	3.40 (.71)	3.32 (1.01)	3.01 (.96)	2.90 (.93)	2.73 (1.04)
Mother's social support (scale of 1 to 5; 5 high)	(2.48) (.94)	2.91 (.93)	3.05 (.90)	3.19 (.95)	3.54 (.89)
Mother's aggressive values (scale of 1 to 7; 7 high)	2.56 (.79)	2.50 (.85)	2.30 (.71)	2.10 (.72)	2.11 (.69)
Mother warmth to child (scale of 0 to 12; 12 high)	9.3 (2.4)	10.0 (2.2)	10.2 (1.8)	10.7 (1.7)	10.2 (2.1)
Cognitive stimulation (Scale of 0 to 4; 4 high)	1.29 (1.2)	2.18 (1.5)	2.36 (1.3)	2.93 (1.3)	2.87 (1.4)

$F(8, 540) = 8.81$, $p < .001$, with harsh discipline providing the only unique contribution (beta = .25, $p < .001$).

Four of the eight socialization variables were significantly or marginally related to the multiyear peer-nominated aggression score. The set of socialization variables significantly predicted the peer-nominated aggression score, $R = .23$, $F(8, 540) = 3.85$, $p < .001$, with harsh discipline providing the only unique contribution (beta = .19, $p < .001$).

Accounting for the Effect of Socioeconomic Status on Child Behavior Problems

Externalizing problems.—The goal of these analyses was to test whether the set of eight socialization variables account for the observed relation between SES and child behavior problems. This question was tested by a combination of hierarchical regression analyses and structural equations analyses. Hierarchical regression analyses revealed that the multiyear Externalizing Problems *T* Score was significantly and uniquely predicted from both SES and the set of eight socialization variables (see Table 5). Given that the total effect of SES on the Externalizing Problems *T* Score was much greater than the increment provided by SES after controlling for the socialization variables, it was apparent that the eight socialization variables account for some (but not all) of the relation between SES and child behavior problems. Specifically, the set of eight socialization variables accounted for 57% of the SES effect on teacher-rated Externalizing Problems.

To test the significance of this effect, structural equation models (LISREL VI; Jöreskog & Sörbom, 1989) were contrasted. For these analyses, all constructs were assumed to have been measured without error, and significant correlations among the eight socialization variables were not constrained. Two models were contrasted. The first model included SES as a predictor of each of the eight socialization variables as well as both SES and the socialization variables as predictors of child behavior problems. The second model was a reduced one in which the paths between the eight socialization variables and child behavior problems were deleted. The difference in chi-squares associated with these two models is a test of the significance of the indirect effect of SES on child behavior problems through the medi-

TABLE 4

CORRELATIONS BETWEEN SOCIALIZATION VARIABLES AND SOCIOECONOMIC STATUS, MULTIYEAR EXTERNALIZING PROBLEMS *T* SCORE, AND MULTIYEAR PEER-NOMINATED AGGRESSION SCORE

	SES	Externalizing *T* Score	Peer-nominated Aggression
Harshness of discipline	−.37***	.31***	.19***
Exposure to violence	−.35***	.20***	.06
Peer stability	.21***	−.04	.03
Life stressors	−.23***	.16***	.08*
Mother's social support	.27***	−.11**	−.06
Mother's aggressive values	−.30***	.15***	.06
Mother warmth to child	.15***	.11*	.08
Cognitive stimulation	.32***	.10*	.09*

NOTE.—*n*'s range from 540 to 576.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

ating path of the set of eight socialization variables. For the multiyear Externalizing Problems score, this path was significant, $\chi^2(8) = 31.61$, $p < .001$, indicating that the hypothesis of partial mediation was supported.

Peer-nominated aggression.—Hierarchical regression analyses revealed that the multiyear aggression score was significantly predicted from both SES and the set of eight socialization variables (see Table 5). The socialization variables accounted for 50% of the SES effect on peer-nominated aggression scores. Again, structural equation models were contrasted to test the significance of this effect. The difference in chi-squares associated with these two models was significant, $\chi^2(8) = 18.75$, $p < .03$, indicating that the hypothesis of an indirect effect of SES on aggression scores through the mediating path of the set of eight socialization variables was supported.

Effects of Gender and Race

The goal of this set of analyses was to determine whether processes varied across gender and race groups. The eight subjects who were of nonwhite, non-African-American background were excluded from these analyses because they came from diverse backgrounds that could not rationally be considered as a single group (nor could they rationally be considered as similar to African-American subjects). To provide a descriptive context for these analyses, analyses

TABLE 5

INCREMENTS IN R^2 WHEN PREDICTING THE MULTIYEAR EXTERNALIZING PROBLEMS *T* SCORE AND THE MULTIYEAR PEER-NOMINATED AGGRESSION SCORE FROM SOCIOECONOMIC STATUS AND THE SET OF EIGHT SOCIALIZATION VARIABLES

	Outcome Variable	
Step and Predictor Variable	Externalizing Problems	Aggression Score
Analysis 1:		
Step 1: Socioeconomic status	.118***	.043***
Step 2: 8 socialization variables	.051***	.033*
Analysis 2:		
Step 1: 8 Socialization variables	.119***	.055***
Step 2: Socioeconomic status	.050***	.021***
Total R^2 from full model	.169***	.076***

NOTE.—Scores indicate the increment in R^2 at that step.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

TABLE 6

GENDER AND RACE MEANS AND ANALYSES OF VARIANCE FOR ALL VARIABLES

VARIABLE	SUBJECT GROUP: White Male (n = 248)	White Female (n = 228)	African-American Male (n = 52)	African-American Female (n = 49)	EFFECTS: Gender	Race	Race, Control SES
Socioeconomic status	42.8	41.7	26.6	26.7		***	
Multiyear externalizing T score	51.5	51.7	54.5	54.3		***	
Multiyear aggression Z score	.18	−.45	.39	−.16	***	**	
Harshness of discipline	2.1	2.0	2.5	2.4		***	
Exposure to violence	1.8	1.9	2.3	2.5		***	***
Peer stability	3.8	3.7	3.5	3.6		*	
Life stressors	2.9	3.0	3.4	3.2		***	
Mother's social support	3.2	3.2	3.0	2.6	*		
Mother's aggressive values	2.2	2.1	2.8	2.4	***	***	*
Mother warmth to child	10.1	10.3	10.2	10.1			
Cognitive stimulation	2.6	2.8	1.6	1.5		***	***

NOTE.—The last column indicates the effect of race after controlling for SES.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

of variance were conducted for each variable with gender and race as factors (see Table 6 for means and a summary of effects).

Gender main effects.—Gender did not have a significant effect on SES or the multiyear Externalizing Problems T Score (T scores are standardized within gender, so true gender effects are disguised). The peer-nominated aggression score did vary significantly according to gender, with males receiving more aggressive scores. Gender main effects were found for two of the eight socialization variables, indicating that mothers held significantly less aggressive values for their daughters than their sons, and mothers of daughters felt less social support than mothers of sons.

Race main effects.—White families had a significantly higher socioeconomic status than African-American families. African-American children received significantly higher multiyear Externalizing Problems Scores and multiyear peer-nominated aggression scores than white children. However, each of these two effects became nonsignificant once SES was controlled statistically. That is, analyses of covariance with race and gender as factors and SES as a covariate yielded nonsignificant effects of race on externalizing and aggression Scores. In contrast, regression analyses in which race was covaried indicated that SES continued to have a strong effect on both externalizing and aggression scores, F's(1, 566) = 62.50 and 17.26, respectively, with each $p < .001$. In other words, the race difference in these behavior scores is fully accounted for by an SES effect, but the SES effect operates independently of any race effect.

Analyses of the eight socialization variables yielded seven significant effects of race. Relative to white children, African-American children: received harsher discipline, were exposed to more violence, had lower peer stability, had mothers who experienced more life stressors and less social support, had mothers who held more aggressive values for their children, and experienced less cognitive stimulation. As with behavior problems, most of these effects became nonsignificant once SES was controlled statistically in analyses of covariance. After SES was taken into account, African-American children and white children differed only in exposure to violence, their mothers' aggressive values, and cognitive stimulation. In contrast, in regression analyses in which race was partialed out first, SES continued to be related to each of the eight socialization variables (each $p < .001$). Again, the race differences in socialization are mostly due to SES, but the SES effect operates above and beyond any race effect.

Effects on relation between SES and child behavior problems.— To test whether

gender or race altered the effect of SES on child behavior problems, interaction terms were computed by multiplying SES and gender (coded 1 for male and 2 for female) and then SES and race (coded 1 for white and 2 for African-American). Hierarchical regression analyses were conducted in which the two multiyear child behavior problem scores were predicted first from SES, gender, and race, and then from the interaction term for SES × gender and the interaction term for SES × race. Neither interaction term was significant in any analysis, indicating that the relations between SES and child behavior problem scores did not differ significantly across gender or race groups.

Effects on relation between socioeconomic status and socialization.—The next analyses examined whether the relation between SES and socialization varied across gender and race groups. As with the previous analyses, interaction terms were computed by multiplying the gender code and each of the eight socialization variables and the race code and each of the eight socialization variables. Hierarchical regression analyses were conducted in which SES was predicted first from the eight socialization variables, gender, and race, and then from the eight gender × socialization interaction terms (as a group) and the eight race × socialization interaction terms (as a group). The eight race × socialization variables did not significantly increment the prediction, $F(8, 511) = 1.76$, N.S., whereas the eight gender × socialization variables did increment the prediction, $F(8, 511) = 2.44$, $p < .02$. The source of this effect was examined by testing the increment of each of the eight gender × socialization terms separately (not as a beta controlling for other interaction terms, but by itself, controlling only for the main effects of race, gender, and socialization). Only one of the interaction terms was significant, for gender × parent-child warmth ($p < .03$). Bivariate correlations revealed that the relation between SES and parent-child warmth was not significant for boys, $r = .08$ but was significant for girls, $r = .23$, $p < .001$. These analyses indicate that SES does not relate to socialization differently for white and African-American children, but that SES may relate to socialization differently for boys and girls, with low SES being associated with lack of parent-child warmth more dramatically in girls than boys.

Effect on the mediation of child behavior problems by socialization.—The next analyses tested whether the mediation of the relation between SES and child behavior problems by socialization varies across gender and race groups. Interaction terms were computed by multiplying each of the socialization variables with the gender code and each of the socialization variables with the race code. Hierarchical regression analyses were conducted in which the Externalizing Problems *T* Score and the aggression score were predicted first from SES, next from gender and race, next from the eight socialization variables, and finally from the eight gender × socialization terms (as a group) and the eight race × socialization terms (as a group). The set of gender × socialization terms was not significant in incrementing the prediction of either child behavior problem score. The set of race × socialization terms was significant in predicting the multiyear Externalizing Problems score, $F(8, 515) = 2.44$, $p < .02$, with a change in R^2 of .030. Two race × socialization terms were significant, for mother's aggressive values and exposure to violence. Separate partial correlations between each of these two variables and the Externalizing Problems Score, controlling for SES, were computed for the two race groups. For white children, the correlations of the mother's aggressive values and exposure to violence with the Externalizing Problems Score (controlling for SES) were in a positive direction (r's = .09 and .13, respectively, with the former $p < .07$ and the latter $p < .01$), whereas, for African-American children, these correlations were nonsignificant and in a negative direction (r's = −.10 and −.03, respectively). The analysis for the multiyear peer-nominated aggression score yielded a nonsignificant effect for the set of race × socialization terms, $F(8, 515) = 1.58$, N.S. It appears that the socialization variables might operate differently across race groups, but the lack of consistency across the two behavior measures suggests that these effects should be interpreted cautiously.

Effect of Single Parenthood

The final set of analyses was designed to disentangle the effect of being raised by a single parent from the effect of SES. These two variables were significantly correlated in this sample, with single-parent children having a mean SES score of 31.7, in contrast with 43.9 for two-parent children, $F(1, 546) = 111.66$, $p < .001$. Also, children raised in single-parent families differed from children in two-parent families on six of the eight socialization variables (for harshness of discipline, exposure to violence, life stressors,

mother's social support, maternal aggressive values, and cognitive stimulation, all $p < .001$). Likewise, children in single-parent families displayed more behavior problems than did children in two-parent families; for multiyear Externalizing Problems, M's = 55.0 and 50.4, respectively, with $F(1, 546) = 52.78$, $p < .001$; for multiyear aggression scores, M's = .17 and −.23, respectively, with $F(1, 546) = 33.56$, $p < .001$.

In spite of the correlation between single-parent status and SES, these two variables made unique contributions to the prediction of the socialization variables and to behavior problem outcomes. With regard to socialization, when single-parent status was controlled statistically through hierarchical regression analyses, the relation between SES and the set of eight socialization variables remained highly significant (increment in $R^2 = .17$, $F(8, 509) = 16.74$, $p < .001$), with SES being significantly related to every one of the eight socialization variables (each $p < .01$). When SES was controlled statistically, single-parent status was significantly related to the set of eight socialization variables (increment in $R^2 = .07$, $F(8, 509) = 6.12$, $p < .001$), but it predicted only two socialization variables (life stressors and exposure to violence, each $p < .001$).

The correlations between SES and child behavior problems held within both single-parent and two-parent families: for single-parent families, the correlations were −.27 and −.13, p's < .001 and .08, for multiyear teacher-rated Externalizing Problems and peer-nominated aggression scores, respectively; for two-parent families, the correlations were −.22 and −.11, $p < .001$ and .04, respectively. Both single-parent status and SES made unique incremental contributions to the prediction of child behavior problem outcomes: for multiyear Externalizing Problems, betas for single-parent status and socioeconomic status = .19 and −.25, respectively, each $p < .001$; and for the multiyear aggression score, betas = .18 and −.13, respectively, each $p < .005$. Thus, the effects of SES on socialization and on child behavior problems are not attributable solely to a correlation between SES and being raised by a single parent. These effects are attributable more directly to some aspect of socioeconomics.

Discussion

This research was guided by five hypotheses concerning the effect of socioeconomic status on children's behavior problems, and all five hypotheses were supported. The first hypothesis was that relative socioeconomic disadvantage is a reliable predictor of emergent behavior problems. This effect held robustly at all geographic sites, in both cohorts, and for both genders of children, and it held for both teacher-rated externalizing problems and peer-nominated aggressive behavior. It held among children in single-parent families as well as two-parent families. This finding held in a study with a longitudinal design in which SES was assessed in preschool and behavior problems were assessed in each of four subsequent years. It held in all four years studied and seems ominously to be leading to *increased* behavior problems as children get older. Children in the lowest socioeconomic class received teacher-rated externalizing problem scores that were, on average, about three-quarters of a standard deviation higher than the national mean. They were three times more likely than the rest of the sample to receive scores in the clinically significant range. And this was not a problem experienced by only a few of these children: over 60% of low-status children received a score in the clinical risk range at some time in elementary school. The relation between social disadvantage and behavior problems appears to be a linear one; that is, the risk of behavior problems and the mean behavior problem score increase linearly with decreasing SES, and deviations from linearity were nonsignificant. We did not find evidence of a threshold effect, below which the effects of poverty are severe and above which the effects of socioeconomics are nil. Our conclusions apply to relative differences across the range of socioeconomic advantage and not to unique circumstances applying only to the most extremely disadvantaged children.

This effect joins a large body of research indicating the relative risk accruing from differences in SES (Rutter, 1981). It must be noted that the children in this study were just entering elementary school. Other studies indicate that there is little effect of SES on behavior problems that begin as late as adolescence (Farrington, 1991). The relative risk afforded by economic disadvantage is evidenced in early-onset behavior problems, which are the type most likely to continue throughout life (Patterson et al., 1992).

The major goal of this study was to understand how socioeconomic disadvantage operates to lead to behavior problems. The

second hypothesis was that socioeconomic status differences are associated with eight components of children's preschool aggressive socialization. Children in the lower socioeconomic classes are more likely than their peers to be the objects of harsh discipline, to observe violence in their neighborhoods and extended families, and to have more transient peer groups and therefore fewer opportunities for stable friendships. They receive less cognitive stimulation in their home environment. These children are being raised by mothers who are relatively less warm in their behavior toward them, who experience a relatively high rate of family life stressors, who perceive less social support and greater isolation, and who are more likely to hold values that aggression is an appropriate and effective means of solving problems. Even though these aspects of socialization are correlated with each other, they provide remarkable independence in their relation to SES, as evidenced by the unique increments in the prediction of SES from five of these eight variables. Thus, relative socioeconomic disadvantage brings an array of features of disadvantage in socialization. These features are not due merely to being raised by a single parent; that is, these findings hold even when the effects of single parenthood are controlled statistically. Instead, this disadvantage in socialization is directly related to economic disadvantage.

The socialization experienced by children at the relatively low ends of the socioeconomic spectrum is the type that seems to be a breeding ground for aggressive behavioral development. Indeed, the third hypothesis was that each of these eight aspects of socialization would predict later behavior problems. This hypothesis was supported for every one of the eight variables. Regression analyses indicated overlap among the variables in their contribution to the prediction of behavior problems, with the strongest effect holding for harsh discipline. This finding is broadly consistent with Patterson's coercion theory of the role of escalating coercive exchanges in aggressive development (Patterson et al., 1992). Finally, as hypothesized, these eight socialization variables, as a set, accounted for about half of the measured effect of SES on behavior problem development, an effect that is highly statistically significant.

These findings join a growing body of evidence indicating that SES affects antisocial behavioral development through socializing experiences that accompany socioeconomic class (e.g., Conger et al., 1992; Patterson et al., 1989). These findings are consistent with hypotheses by Conger et al. (1992) that economic hardship acts as a stressor on the parents, leading to marital conflict, lowered quality of parenting (i.e., harsh discipline and lack of warmth), and ultimately child maladjustment. The findings of this study also indicate that the socialization variables assessed mediate the effect of SES only partially. They account for a sizable portion of the variance in SES, but this portion still leaves a large gap in our knowledge of how SES operates. It may be that we did not select or identify all of the relevant aspects of antisocial socialization that are associated with low SES. For example, we did not assess the effects of social stigma, parental monitoring of child behavior, or racism that might add to the aggressive socialization of children in the lowest socioeconomic class. The possibility also remains that factors other than family social experiences that might be associated with SES might also contribute to antisocial development (such as genetically endowed factors, environmentally induced prenatal or perinatal biological factors, maternal age, or non-family socialization factors).

It must be emphasized that the findings of this study are not an indictment of parents in the lowest socioeconomic class. As Ogbu (1981) has noted, socializing adults in subcultural groups adapt their parental routines to their perceived unique needs. Kelley et al. (1992) have suggested that parents in violent neighborhoods, in fearing that their children are at risk to be victimized or to victimize others, may be particularly sensitive to misbehavior in their children and may respond to the slightest signs of misbehavior through extraordinarily harsh means of external control. If this is the case, the empirical findings that are emerging (i.e., Patterson et al., 1992) are that this parental pattern may have paradoxically adverse effects in actually *promoting* the antisocial development that it was meant to obviate. Another possibility is that a degree of aggressiveness in the child is adaptive in a high-risk neighborhood, and the parents are endorsing aggressive values out of a positive desire to socialize their children defensively. In sum, parents in the lowest socioeconomic status group are doing the best job that they can under highly stressful and adverse circumstances.

Even though gender and race were not primary foci of this study, the diverse sample

afforded the opportunity to examine effects of these factors. The major gender difference found in socialization was a tendency for mothers of boys to endorse aggressive values more heavily for their sons than for their daughters. This effect joins a long literature on gender differences in socialization of aggression (Maccoby & Jacklin, 1974). More striking is the finding that gender does not appear to moderate substantially the process by which SES affects the development of conduct problems.

More complicated are the effects of race. Numerous differences were found between white children and African-American children in behavior problems and socialization. At all ages, African-American boys and girls were rated by teachers and peers as higher in conduct problems than white children. However, these differences were fully accounted for by SES; that is, once SES was taken into account, race differences in both teacher-rated and peer-nominated conduct problems became nonsignificant. Race differences were also found in socialization practices and experiences. In contrast with white children, African-American children in this sample experience harsher discipline, greater exposure to violence, less peer group stability, more life stresses, and less cognitive stimulation, and their mothers experience less social support and hold more aggressive values for them. Again, most of these differences are accounted for by SES effects, although several effects remain. Some of these effects may be understood as reactions to living in circumstances of economic deprivation and danger, as described above (Conger et al., 1992). Other effects may transcend economic hardship and may be outcomes of longstanding societal racial threat. Thus, African-American children in this sample are exposed to relatively high rates of violence that cannot be accounted for solely by socioeconomic class. In turn, the mothers of these children endorse the child's use of aggression to a greater degree than do the mothers of white children, perhaps as an attempted response at adaptation to a threatening environment (Ogbu, 1981). Race differences in the process by which SES has an impact on child behavior problems were significant but few and inconsistent. In general, to the extent that the design of the current study afforded scrutiny, the models that have been described here are not substantively moderated by race.

The findings of this study point toward prevention efforts with children who are at high risk by virtue of their socialization in an economically disadvantaged home. Numerous such prevention efforts are under way (e.g., Conduct Problems Prevention Research Group, 1992; and Reid, 1990), and others have shown signs of long-term impact (Zigler, Taussig, & Black, 1992). The current study suggests that these interventions should focus on changing parental patterns of harsh discipline, because this single variable accounts for the major portion of the effect of socioeconomic status on antisocial development. Interventions might also focus on the other seven aspects of socialization studied, because these variables are also correlated with antisocial outcomes.

Numerous caveats must be emphasized regarding the current study. Even though the empirical tests conducted in this study have causal variables in the models that guide them, the study is still a correlational one. A stronger case for mediation of SES effects would be made if the mediating variables could be experimentally manipulated (Zussman, 1980). A second caveat is that the total amount of variance in child behavior problems that has been explained in this study by the combination of socioeconomic and socialization variables is still fairly small (8%–17%). Clearly, other factors, or better measures of the constructs studied here, must be identified. Another caveat is that the findings reported here may generalize only to our populations, that is, to children growing up in mid-South and Midwestern urban and small city communities. Antisocial development may have quite different socialization components for children in South Central Los Angeles or racially segregated Boston. The generality of antisocial developmental models across regional and subcultural groups is quite unknown at this point. The current study at least had the advantage of including three diverse geographic and cultural communities (mid-South urban Nashville, TN; Appalachian Knoxville, TN; and working-class central Indiana), which is a rarity in psychological developmental research, and all three samples showed similar patterns.

Another caveat is that the current findings apply only to antisocial development of an externalizing nature. Interestingly, in our samples, internalizing development (i.e., the Internalizing Problems *T* Score on the TRF) is also significantly predicted from low socioeconomic status (r's of $-.14$, $-.12$, $-.17$, and $-.15$ [all $p < .005$] for kindergarten, and grades 1, 2, and 3, respectively). However,

when Externalizing Problems is controlled statistically, the Internalizing score is no longer significantly correlated with SES (the reverse is not true; i.e., the Externalizing score continues to correlate with SES even when the Internalizing score is controlled). Also, the Internalizing score is not highly correlated with the eight socialization variables studied here. Thus, the developmental psychopathology of internalizing problems follows a different path than that for externalizing problems.

In sum, this study represents one incremental step in understanding how conditions of relative socioeconomic deprivation lead to the development of antisocial behavior during the early elementary school years.

References

Achenbach, T. M., & Edelbrock, C. S. (1986). *Manual for the Teacher's Report Form of the Child Behavior Profile.* Burlington: University of Vermont.

Bandura, A. (1973). *Aggression: A social learning analysis.* Englewood Cliffs, NJ: Prentice-Hall.

Berndt, T. J. (1989). Obtaining support from friends during childhood and adolescence. In D. Belle (Ed.), *Children's social networks and supports* (pp. 308–331). New York: Wiley.

Caldwell, B., & Bradley, R. (1984). *Home Observation for the Measurement of the Environment.* Unpublished manuscript, University of Arkansas.

Cauce, A. M., Felner, R. D., & Primavera, J. (1982). Social support in high-risk adolescents: Structural components and adaptive impact. *American Journal of Community Psychology,* **10,** 417–428.

Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology,* **18,** 557–570.

Coie, J. D., & Krehbiel, G. (1984). Effects of academic tutoring on the social status of low-achieving, socially-rejected children. *Child Development,* **55,** 1465–1478.

Conduct Problems Prevention Research Group (1992). A developmental and clinical model of antisocial development and prevention. *Development and Psychopathology,* **4,** 509–527.

Conger, R. D., Conger, K. L., Elder, G. H., Jr., Lorenze, F. O., Simons, R. L., & Whitbeck, L. B. (1992). A family process model of economic hardship and adjustment of early adolescent boys. *Child Development,* **63,** 526–54.

Cummings, E. M., Zahn-Waxler, C., & Radke-Yarrow, M. (1981). Young children's responses to expressions of anger and affection by others in the family. *Child Development,* **52,** 1274–1281.

Dodge, K. A., Bates, J. E., & Pettit, G. S. (1990). Mechanisms in the cycle of violence. *Science,* **250,** 1678–1683.

Dubois, D. L., Felner, R. D., Brand, S., Adan, A. M., & Evans, G. (1992). A prospective study of life stress, social support, and adaptation in early adolescence. *Child Development,* **63,** 542–557.

Dumas, J. E. (1986). Indirect influence of maternal social contacts on mother-child interactions: A setting event analysis. *Journal of Abnormal Child Psychology,* **14,** 205–216.

Elder, G. H., Jr., & Caspi, A. (1988). Economic stress in lives: Developmental perspectives. *Journal of Social Issues,* **44,** 25–45.

Eron, L. D., Huesmann, L. R., & Zelli, A. (1991). The role of parental variables in the learning of aggression. In D. J. Pepler & K. H. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 169–188). Hillsdale, NJ: Erlbaum.

Eron, L. D., Walder, L. O., & Lefkowitz, M. M. (1971). *The learning of aggression in children.* Boston: Little, Brown.

Farrington, D. P. (1978). The family backgrounds of aggressive youths. In L. Hersov, M. Berger, & D. Shaffer (Eds.), *Aggression and antisocial behavior in childhood and adolescence* (pp. 73–93). Oxford: Pergamon.

Farrington, D. P. (1991). Childhood aggression and adult violence: Early precursors and later-life outcomes. In D. J. Pepler & K. H. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 5–29). Hillsdale, NJ: Erlbaum.

Gelles, R. J. (1980). Violence in the family: A review of research in the seventies. *Journal of Marriage and the Family,* **42,** 873–885.

Hollingshead, A. A. (1979). *Four-Factor Index of Social Status.* Unpublished manuscript, Yale University, New Haven, CT.

Jöreskog, K. G., & Sörbom, D. (1989). *LISREL VII: User's reference guide* (1st ed.). Mooresville, IN: Scientific Software.

Jouriles, E. N., Murphy, C. M., & O'Leary, K. D. (1989). Interspousal aggression, marital discord, and child problems. *Journal of Consulting and Clinical Psychology,* **57,** 453–455.

Kelley, M. L., Power, T. G., & Wimbush, D. D. (1992). Determinants of disciplinary practices in low-income black mothers. *Child Development,* **63,** 573–582.

Maccoby, E. E., & Jacklin, C. N. (1974). *The psychology of sex differences.* Stanford, CA: Stanford University Press.

McCord, J. (1977). A comparative study of two generations of native Americans. In R. F. Meier (Ed.), *Theory in criminology* (pp. 83–92). Beverly Hills, CA: Sage.

McLoyd, V. C. (1989). Socialization and development in a changing economy. *American Psychologist*, **44**, 293–302.

McLoyd, V. C. (1990). Minority children: Introduction to the special issue. *Child Development*, **61**, 311–346.

Ogbu, J. U. (1981). Origins of human competence: A cultural-ecological perspective. *Child Development*, **51**, 413–429.

Olweus, D. (1980). The consistency issue in personality psychology revisited—with special reference to aggression. *British Journal of Social and Clinical Psychology*, **19**, 377–390.

Patterson, C. J., Cohn, D. A., & Kao, B. T. (1989). Maternal warmth as a protective factor against risk associated with peer rejection among children. *Development and Psychopathology*, **1**, 21–38.

Patterson, C. J., Kupersmidt, J. B., & Vaden, N. A. (1990). Income level, gender, ethnicity, and household composition as predictors of children's school-based competencies. *Child Development*, **61**, 485–494.

Patterson, G. R., Reid, J. B., & Dishion, T. J. (1992). *Antisocial boys*. Eugene, OR: Castalia.

Pelton, L. H. (1978). Child abuse and neglect: The myth of classlessness. *American Journal of Orthopsychiatry*, **48**, 608–617.

Pettit, G. S., & Bates, J. E. (1989). Family interaction patterns and children's behavior problems from infancy to four years. *Developmental Psychology*, **25**, 413–420.

Reid, J. (1990). *Preventive intervention research center*. Unpublished funded NIMH grant proposal.

Rutter, M. (1981). The city and the child. *American Journal of Orthopsychiatry*, **51**, 610–625.

Rutter, M., & Madge, N. (1976). *Cycles of disadvantage*. London: Heinemann.

Steinberg, L. D., Catalano, R., & Dooley, D. (1981). Economic antecedents of child abuse and neglect. *Child Development*, **52**, 975–985.

Strayer, F. F., & Noel, J. M. (1986). Triadic conflict among young children: An ethological study of prosocial and antisocial aggression. In C. Zahn-Waxler (Ed.), *Altruism and aggression: Social and sociological origin*. New York: Cambridge University Press.

Wahler, R. G. (1980). The insular mother: Her problems in parent child treatment. *Journal of Applied Behavior Analysis*, **13**, 207–219.

Wallach, M. A., & Wallach, L. (1976). *Teaching all children to read*. Chicago: University of Chicago Press.

Zigler, E., Taussig, C., & Black, K. (1992). Early childhood intervention: A promising preventative for juvenile delinquency. *American Psychologist*, **47**, 997–1005.

Zussman, J. U. (1980). Situational determinants of parental behavior: Effects of competing cognitive activity. *Child Development*, **51**, 792–800.