

## Parental Resources and the Transition to Junior High

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This study examined whether maternal resources of involvement and autonomy support might buffer children against the negative effects of the transition to junior high. A diverse sample of 60 children, their mothers, and teachers participated. Three types of involvement (school, cognitive, and personal) and levels of autonomy support were assessed during both 6th and 7th grades. Children's motivational resources (perceived competence, control understanding, self-regulation) as well as outcomes of self-worth, grades, and adjustment were also assessed at the 2 time periods. Children whose mothers were higher in cognitive and personal involvement in 6th grade decreased less in perceived competence over the transition relative to those of mothers who were less involved. Children of more autonomy supportive mothers increased less in acting-out and learning problems. Changes in maternal resources were also predictive of changes in motivation and outcomes. The results suggest the importance of the home environment in children's coping with the transition to junior high.

There has been much recent attention devoted to how children make the transition from elementary school to junior high school. Such attention has been stimulated by concern that this transition may disrupt children's self-esteem and academic success, and have enduring consequences for children's long-term school trajectories (Eccles, Lord, Roeser, Barber, & Jozefowicz, 1997). Research has generally supported the notion that this

transition is a time of vulnerability, although the universality of disruption is controversial. Several studies identified decreases in self-esteem following the transition (e.g., Seidman, Allen, Aber, Mitchell, & Feinman, 1994; Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991), but others found no changes (Berndt, 1987; Fenzel & Blyth, 1986; Hirsch & Rapkin, 1987) or even increases in self-esteem (Proctor & Choi, 1994). Still, other studies found declines to be limited to females (Blyth, Simmons, & Bush, 1978). Most likely, the discrepancies among these studies can be attributed to differences in the populations studied as well as the communities and characteristics of the schools from which, and into which, children are transitioning. Seidman et al.'s study, which found decreases in self-esteem, involved a largely disadvantaged population and a transition into a large, bureaucratic system. Proctor and Choi (1994) found increases in self-esteem over the transition for children living in a small college community.

One point on which most researchers agree is that there is great variability in children's responses to the transition. Thus, the literature has turned from an emphasis on whether, in general, the transition is disruptive for children, to an examination of who is vulnerable and what factors protect children from experiencing declines in self-perceptions and academic performance (Lord, Eccles, & McCarthy, 1994). For example, there is some evidence that low-achieving children are particularly vulnerable (Midgley, Feldlaufer, & Eccles, 1988a). Lord et al., found that children with more negative self-perceptions in sixth grade experienced greater declines in self-esteem across the transition.

Children's perceptions of peer and school support have also been shown to be important predictors of how children adjust to the transition. Hirsch and DuBois (1992) found that children with little peer support showed increases in symptomatology over the transition. Seidman et al. (1994) found that children who perceived an increase in daily hassles with the school from sixth to seventh grade exhibited decreased academic expectations, class preparation, and grade point averages.

We view the family as another context that may contribute to children's response to the transition. In particular, the resources provided by families to children may serve as protective factors during this vulnerable period. Two such resources are parent involvement and autonomy support. There is a large literature on the positive effects of parent involvement on children's school performance and adjustment, most of which focuses on the elementary grades. The provision of autonomy support, or opportunities to act choicefully and autonomously, has also been found to be positively related to key school outcomes (Grolnick & Ryan, 1989). Of interest in this study was whether these parental resources could serve as buffers for children in their transitions to junior high. We argue that parent involvement

and autonomy support build the motivational resources that allow children to manage the transition effectively. Each of these resources will be examined in turn.

### Parent Involvement and the Transition to Junior High

We focus on the potential buffering effects of parent involvement for several reasons. First, parent involvement is a potent factor in predicting school success in children of all ages (e.g., Epstein & Dauber, 1991; Stevenson & Baker, 1987). Second, it is a resource that is open to intervention at either the school or family level (Grolnick, Benjet, Kurowski, & Apostoleris, 1997). Third, parent involvement is a concrete resource that can be measured by multiple sources, including parents, teachers, and students.

Although the fact that there are positive effects of parent involvement is relatively uncontroversial, questions regarding the relevant dimensions of parent involvement and the mechanisms through which it affects children have continued to invite research attention. Like others (e.g., Cone, DeLawyer, & Wolfe, 1985; Epstein, 1990), Grolnick and Slowiaczek (1994) argued that parent involvement is a multidimensional construct with diverse groups of parents likely to be involved in different ways. In particular, these authors focused on three types of involvement. First, *school involvement* includes participating in activities and events at the child's school. Second, *cognitive involvement* includes exposing children to intellectually stimulating activities such as going to the library or talking about current events. Such activities, which are similar to those children encounter at school, serve to narrow the gap between home and school. Finally, *personal involvement* includes keeping abreast of what is going on in the child's school life. These types of involvement have been found to be only moderately correlated.

These authors also discussed both direct and indirect models for understanding the impact of parent involvement. A direct effects model states that parent involvement affects school outcomes by increasing school skills through practice and instruction. Alternatively, the indirect model states that parent involvement affects outcomes by enhancing children's motivational resources, which fuel action and guide achievement behaviors. Three motivational resources are thought to mediate the relationship between parent involvement and school success. First, to act, individuals need to know how their actions are connected to success and failure outcomes or have a sense of *control understanding* (Skinner, Wellborn, & Connell, 1990). Second, children must have a sense that they can carry out the behaviors necessary to achieve success, or a sense of *perceived compe-*

tence (Harter, 1982). Finally, children can have a sense of control and competence but might still feel coerced or pressured into behaving. Thus, a third resource is a sense of autonomy or *self-regulation* in which action is experienced as choicefully self-initiated (Connell & Ryan, 1987). Previous studies have shown that these motivational resources—control understanding, perceived competence, and self-regulation—make significant and independent contributions to children's school success (Grolnick, Ryan, & Deci, 1991). Thus, we included these motivational resources as key outcomes in our study, in addition to more traditional indexes of success, including grades and adjustment ratings.

In this study, we examined the three types of involvement in mothers as they impacted the transition to junior high. There were several questions that were of interest. The first dealt with maternal involvement during the last year of elementary school. Does maternal involvement in sixth grade predict changes in motivational resources and school outcomes over the transition? We hypothesized that the concrete resources (e.g., provision of books, trips to the library) measured by cognitive involvement, as well as the interest and concern conveyed by personal involvement activities, would be important in children's adjustment to the transition. Given the more impersonal nature of the junior high school (Midgley, Feldlaufer, & Eccles, 1988b), we expected mothers' earlier involvement to provide the resources to enable children to make the transition without undue negative changes.

The second set of questions dealt with changes in maternal behavior from the sixth- to the seventh-grade years. First, we expected normative decreases overall in parent involvement at school. Such decreases are consistent with the linear decreases in school involvement found with increasing grade level (e.g., Stevenson & Baker, 1987). A decrease was also expected given the different structure of the junior high. Junior high schools are larger and more regimented than elementary schools, and teachers are responsible for many more students. Because of this, opportunities for informal home-school contact are diminished. Personal and cognitive involvement may be more stable, as they are less susceptible to changes in the school structure. Beyond this, however, as parent involvement is a dynamic variable, parents are likely to differ in the degree to which they change over the transition. Thus, we asked whether children of mothers who decreased their levels of involvement between sixth and seventh grade would display more difficulty with the transition than those whose mothers were stable in or increased their levels of involvement. We suggest that such drops decrease the emotional and tangible support that would otherwise allow for stability of motivational resources. Here we speak of relative changes because the overall levels of some types of involvement are likely to decrease from sixth to seventh grade. Further, in

contrast to other studies showing the importance of involvement at the school, we predicted that personal and cognitive involvement, and changes in these variables, would be associated with the quality of children's transitions to junior high.

### **Parental Autonomy Support and the Transition to Junior High**

According to self-determination theory, there is a basic psychological need for a sense of autonomy or choicefulness (Deci & Ryan, 1985). Children's experiences of autonomy, in the academic domain, have been found to be associated with adaptive behaviors, such as use of positive coping strategies for dealing with adversity and with positive grades (Ryan, Connell, & Grolnick, 1992). The adults in children's environments play key roles in either facilitating or undermining their experiences of autonomy. For example, Ryan and Grolnick (1986) found that children in the classrooms of teachers who were perceived as more autonomy supportive reported greater control understanding, perceived competence, and self-regulation relative to children perceiving their teachers as more controlling. Similarly, children of more controlling parents showed lower levels of motivational resources and lower school performance than those of more autonomy supportive parents (Grolnick & Ryan, 1989; Grolnick, Ryan, & Deci, 1991).

Although it is a pertinent need across the life span, the desire for autonomy, in the form of increasing responsibility for decisions and behaviors, is particularly salient for the adolescent who may perceive himself or herself as ready and able to make such judgements. Steinberg (1990) describes early adolescence as a period of transformation in the parent-child relationship. Notably, parents and children may experience increased conflict around the onset of puberty (Hill, 1985; Steinberg, 1988). Such conflicts are likely to center around authority, as adolescents may defer less and parents attempt to reassert authority by increasing control. Greater opportunities for decision making have been found to be associated with higher self-esteem, greater self-reliance, and greater satisfaction with school in adolescents (Epstein & McPartland, 1977; Flanagan, 1986). One highly relevant study examined family decision making and children's transitions to junior high (Lord et al., 1994). In particular, the study focused on children's perceptions of the degree to which parents were attuned to adolescents' needs for decision making and used democratic decision making practices. These authors found that the more adolescents described their parents as not attuned and the less democratic decision making they were afforded before the transition, the more self-esteem decreased across the transition.

This study underscores the importance of children's perceptions of autonomy support in the transition to junior high.

In this study, we examined children's perceptions of maternal autonomy support and their impact on the transition to junior high. First, we were interested in whether maternal autonomy support predicted changes in children's motivational resources and school outcomes over the transition. As with involvement, we expected that autonomy supportiveness prior to the transition would enable children to cope adaptively. We were also interested in the potential effects of changes in autonomy support on changes in children's outcomes and self-perceptions. We expected that decreases in autonomy support (increases in control) would be associated with more negative consequences in comparison to increased or stable autonomy support.

In summary, this study examined the effects of two sets of family environmental variables on the transition to junior high school: maternal involvement and maternal autonomy support. In contrast to studies that look at environmental variables only before the transition, we focused on the effects of pretransition levels as well as changes in these environmental variables over the transition on multiple indicators of children's adjustment.

## METHOD

### Participants

The larger 3-year study from which this sample was drawn included 209 children, who were in the third to fifth grade in Year 1 of the study, their mothers, and 28 teachers from a medium-sized urban setting. From this sample, we examined data from the second and third waves of the study for 60 families whose children were in the sixth grade in Year 2 of the study and progressed to the seventh grade in Year 3. There were 25 boys and 35 girls. Seventy-five percent ( $n = 45$ ) had two parents of European American origin, 2% had two African American parents (1 boy), 11% had two Hispanic parents (4 boys, 3 girls), and 2% had two Native American parents (1 girl). Six children were of biethnic origin: 2 girls European American and Hispanic, 2 girls European American and African American, 1 boy European American and Asian American, and 1 girl European American and Native American. On Hollingshead's (1975) index of social position, which weights parent education and occupational status to create a raw score that can then be placed into one of five categories, one third fell into social class 1 (upper), 26% into social class 2 (upper middle), 6% into social class 3 (middle), 10% into social class 4 (lower middle), and 23% into social class 5 (lower).

## Procedure

At the start of this study, children were given permission slips to take home to their parents that described the project and asked for their permission to be contacted. Sixty-four percent of the mothers returned slips. Of the mothers returning slips, 70% agreed to participate. The resulting participation rate was thus 45%.

For their convenience and to be sensitive to their preferences, mothers were offered the choice of being interviewed at their homes or at the university laboratory. All but two of the full sample were interviewed in their homes. Each received \$20 for participating. Children completed questionnaires in their classrooms. While children completed questionnaires, teachers filled out ratings of mothers' involvement and children's behavior. They also provided end of year grades in English and math.

Parent interviews, child questionnaires, and teacher ratings were administered in the spring of Year 2. In the spring of Year 3, mothers were recontacted, reinterviewed, and asked to provide the names of the junior high schools their children were attending. The majority of children were attending one of three schools. Junior highs were contacted and all principals agreed to allow the investigators to gather data from children and teachers and to provide grades for participating students.

## Measures

*Parent involvement indexes.* Mothers, teachers, and children completed questionnaires in Years 2 and 3. We describe the assessments of parent involvement, organized by type of involvement.

### *School Involvement*

*Parent-school interaction questionnaire—Child report (Grolnick & Slowiaczek, 1994).* This five-item questionnaire assesses children's perceptions of their parents' levels of involvement at school. Children rate, on a scale from 1 (*never*) to 4 (*a lot*), how often their mothers engage in five behaviors including attending parent-teacher conferences and school events (e.g., "My mother goes to school events and activities, like book fairs, sports, plays").

*Parent-school interaction questionnaire—Parent report.* The 16 items on this measure, derived from surveys by Epstein and Salinas (1993) and Grolnick and Slowiaczek (1994), describe 16 activities at school (e.g., "Went

to a parent–teacher conference,” “Went to a school event or activity”). Mothers indicate how often in the current school year they have engaged in these activities on a scale from 1 (*never*) to 5 (*many times*).

**Parent–school interaction questionnaire—Teacher report.** Teachers rate parents’ behavioral involvement at school on six items similar to those completed by mothers and children (e.g., attending school activities and events, going to open house) on a scale from 1 (*never*) to 5 (*regularly*).

### *Cognitive Involvement*

**Child report.** On this five-item scale, a shortened version of the checklist developed by Grolnick and Slowiaczek (1994), children designate how often their mothers engage in five activities with them at home such as talking about current events and going to the library (e.g., “My mother talks about current events with me”). These items were rated on a scale from 1 (*never*) to 4 (*a lot*).

**Parent report.** Mothers rate the frequency of their engagement in five cognitive type activities with their child (e.g., “Take my child to the library”) on a scale from 1 (*never*) to 5 (*daily*).

### *Personal Involvement*

**Child report.** Children rate parents’ interest in and knowledge about their school lives on five items such as “My mother knows when my report card is going to come out” and “My mother knows what I am doing in school.” Children rate the veracity of the items on a scale from 1 (*not at all true*) to 4 (*very true*).

**Parent report.** Mothers rate their personal involvement in their children’s schooling on five items similar to those rated by children, such as “I know what my child is currently doing in school” and “I know the names of my child’s classmates.” Mothers indicate their agreement with the items on a scale from 1 (*strongly disagree*) to 4 (*strongly agree*).



### Parent Involvement Composites

Consistent with previous research (Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Grolnick & Slowiaczek, 1994), showing a three-factor solution for various ratings of involvement corresponding to school, cognitive, and personal involvement, cross-rater (parent, child, and teacher for school involvement, parent and child for cognitive and personal involvement) composites were computed for each involvement type. Correlations among the three indexes of school involvement for this subsample were mother-child,  $r = .46$ ,  $p < .001$ ; mother-teacher,  $r = .60$ ,  $p < .001$ ; and child-teacher,  $r = .57$ ,  $p < .001$ . Correlations between mother and child ratings were, for cognitive and personal involvement respectively,  $r = .30$ ,  $p < .01$ , and  $r = .37$ ,  $p < .001$ . Cronbach's alphas for the composites were as follows, for Years 2 and 3, respectively: school = .87, .88; cognitive = .67, .68; and personal = .75, .66.

### Parent Autonomy Support

Children's perceptions of their mothers' autonomy support were assessed on the Parenting Context Questionnaire (Grolnick & Wellborn, 1988). This 40-item scale taps children's perceptions of their mothers and fathers on three dimensions: autonomy support, involvement, and structure. Only the 8-item mother autonomy support scale, which measures the degree to which mothers provide choice for children versus pressuring or controlling their behavior, was included. An example item is, "When it comes to school, my mother is always telling me what to do." Children indicate their agreement on a scale from 1 (*not at all true*) to 4 (*very true*). Low scores indicate more controlling behavior and high scores more autonomy-supportive behavior. Cronbach's alphas for autonomy support were .76 and .84 for Years 2 and 3, respectively.

### Child Outcomes

*Perceived competence.* Perceived competence was measured using the Self-Perception Profile for Children (Harter, 1982). This scale assesses children's perceptions of their competence in several domains and in general (self-worth). In this study, academic as well as self-worth items were administered to assess children's perceived cognitive competence and self-worth (respectively). Items (six for each subscale) present two hypothetical types of children, one low in competence and the other high.

Children are asked to choose which child they are most like and then to determine if the item is “really true” or only “sort of true” for them. Items are scored on a scale from 1 (*low*) to 4 (*high*) perceived competence. Reliabilities (Cronbach’s alpha) were for Years 2 and 3, respectively, .78 and .84 for self-worth and .78 and .82 for perceived cognitive competence.

**Control understanding.** This Multidimensional Measure of Children’s Perceptions of Control (Connell, 1985) was used to measure children’s understanding of the control of their success and failure outcomes in several domains: cognitive, social, physical, and in general. Three sources, internal (child has control), powerful others (outside agents have control), and unknown (child does not know who or what controls outcomes), are included. Children are presented with statements about control, such as “When I do well in school I usually don’t know why,” to which they indicate their agreement or disagreement. The four-item unknown subscale (reverse scored as control understanding to be consistent with the other measures) in the cognitive domain was of interest in this study. Cronbach’s alphas for control understanding were .52 and .62 for Years 2 and 3, respectively.

**Self-regulation.** To assess children’s regulation of their school behavior, children completed the 26-item Self-Regulation Scale (Ryan & Connell, 1989). Each item on the scale presents a reason why someone would engage in a school-related behavior (i.e., homework, classwork, trying to do well in school). Each reason is associated with one of four subscales ranging from lesser to greater autonomy in regulation. The subscales, external (activities engaged in because of positive or negative contingencies or rules), introjected (to avoid negative internal consequences such as guilt or anxiety), identified (to achieve a self-valued goal), and intrinsic (for inherent enjoyment or fun) are weighted to compute an index (self-regulation) that represents the degree of autonomy in children’s regulation of their school behaviors. Reliabilities for the individual subscales ranged from .69 to .85 in Year 2, and from .71 to .86 in Year 3.

**Acting-out and learning problems.** Teachers provided ratings of children’s school behavior problems on the Teacher–Child Rating Scale (Hightower et al., 1986), which includes two dimensions, acting-out and learning problems. The three acting-out items measure the degree to which the student exhibits disruptive or aggressive behavior or both. The three learning problem items assess the degree to which the student exhibits

learning problems, such as difficulty attending and problematic study habits. Alphas for the acting-out composite were .90 at Years 2 and 3. For the learning problems subscale, corresponding alphas were .94 and .93.

## Grades

Teachers provided year-end grades in reading and math at sixth grade and English and math at seventh grade. Grades were converted to numbers (1 = F, 13 = A+).

## RESULTS

### Transition Effects

Before examining relations between parent resources and children's responses to the transition, we first looked at any overall effects of the transition. These analyses were included to address questions in the literature on the overall effects of the transition to junior high on self-perceptions and adjustment, as well as to provide a context for interpreting the primary analyses. To examine transition effects, repeated measures analyses of variance (ANOVAs) were conducted with time, gender, and socioeconomic status (SES) as factors. SES groups were created by conducting a mean split on Hollingshead raw scores. This resulted in a higher group ( $n = 35$ ), which corresponded to Hollingshead categories 1 (upper) and 2 (upper middle) and was thus labeled *high*, and a lower group ( $n = 25$ ), which corresponded to Hollingshead groups 3 (middle), 4 (lower middle), and 5 (lower) and was thus labeled *mid-low*. To see whether transition effects might vary as a function of gender or SES, Time  $\times$  Gender, Time  $\times$  SES, and Time  $\times$  Gender  $\times$  SES interactions were included (see Table 1).

There were several Time  $\times$  SES interaction effects. A Time  $\times$  SES interaction for self-worth indicated that there was a sharp decrease in self-worth for the mid-low SES children, 3.19 to 2.57,  $T(25) = 2.65$ ,  $p < .02$ , and no significant change in self-worth for the high SES children, 3.13 to 3.23,  $T(40) = -1.25$ ,  $p < .22$ . The main effect for time for self-worth also indicated a significant decrease ( $M = 3.12$  to  $M = 3.05$ ). The significant Time  $\times$  SES effect for reading grades indicated that the mid-low SES children decreased more precipitously over the transition, 8.50 to 4.62,  $T(25) = 4.54$ ,  $p < .001$ , relative to the high-SES children, 11.09 to 9.35,  $T(35) = 3.92$ ,  $p < .001$ , and the main effect for time showed decreases across time ( $M = 10.44$  to  $M = 8.08$ ). A significant main effect for time for math grades also showed a decrease over

TABLE 1  
 Repeated Measures Analyses of Variance of Motivational Variables, Academic Outcomes,  
 and Parent Resources by Child Gender and SES

	<i>F Values</i>					
	<i>Gender</i>	<i>SES</i>	<i>Time</i>	<i>Time × Gender</i>	<i>Time × SES</i>	<i>Time × Gender × SES</i>
Perceived cognitive competence	2.93 <sup>+</sup>	6.66**	3.54 <sup>+</sup>	2.52	.86	.93
Self-worth	.22	2.20	8.36**	.83	15.09***	.87
Control understanding	.01	4.49*	.82	.92	3.83*	.28
Self-regulation	.73	1.68	.00	1.71	.37	.85
Reading grades	15.16***	32.09***	30.17***	.00	3.82*	.84
Math grades	3.35 <sup>+</sup>	12.06**	13.52***	.00	.82	.00
Acting-out	7.65**	1.46	.71	.10	.03	.46
Learning problems	7.15**	6.99**	.49	1.64	.16	3.64 <sup>+</sup>
Maternal autonomy support	4.13*	.06	3.47 <sup>+</sup>	2.88 <sup>+</sup>	2.20	.23
School involvement	.62	7.51**	46.46***	7.50**	.01	.52
Cognitive involvement	.27	2.02	.21	4.31*	.01	3.60 <sup>+</sup>
Personal involvement	.07	2.51	1.27	.38	.47	.00

Note. SES = socioeconomic status.

<sup>+</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

the year ( $M = 10.04$  to  $M = 8.09$ ). There were no Time  $\times$  Gender interaction effects, indicating no evidence that the transition was differentially negotiated by boys and girls, and there were no Time  $\times$  Gender  $\times$  SES interactions.

We were also interested in whether there were cross-time effects on the predictors in the study: maternal autonomy support and the three involvement variables. A series of similar repeated measures, ANOVAs with time, gender, and SES, as well as all higher order effects, were conducted (see Table 1). A significant Time  $\times$  Gender effect for school involvement of mothers indicated that mothers of boys decreased their levels of involvement at school from sixth ( $M = 2.67$ ) to seventh grade ( $M = 2.26$ ),  $T(25) = 3.28$ ,  $p < .004$ ; but mothers of girls decreased even more precipitously ( $M = 2.81$  at sixth grade,  $M = 1.98$  at seventh grade),  $T(35) = 8.65$ ,  $p < .001$ . The main effect of time for school involvement was also significant ( $M = 2.75$  at sixth grade,  $M = 2.10$  at seventh grade). There was a Time  $\times$  Gender interaction for autonomy support, indicating that although mothers decreased their levels for their boys from sixth ( $M = 2.76$ ) to seventh ( $M = 2.39$ ) grade,  $T(25) = 2.30$ ,  $p < .03$ , they were relatively stable in the autonomy support provided to their girls ( $M = 2.91$  at sixth grade,  $M = 2.98$  at seventh grade),

$T(35) = -.51, p < .61$ . There were no significant Time  $\times$  SES or Time  $\times$  Gender  $\times$  SES effects.

### Correlations Among Major Constructs

Correlation analyses were conducted to examine relations among maternal resource indicators and between resources and child outcomes. Results indicated that the three types of parent involvement were moderately related within time ( $r_s = .35-.39$ ). Further, there were strong relations between the same types of involvement across time, indicating consistency in mothers' levels of involvement ( $r_s = .41, .66$ , and  $.42$ , for school, cognitive, and personal, respectively). There were no significant relations between parent involvement indexes and maternal autonomy support at Time 1 and only one significant relation at Time 2. Mothers who were higher in school involvement tended to be lower in autonomy support,  $r = -.33, p < .05$ .

Table 2 presents correlations between maternal resource variables and child outcomes. Within time relations were strongest for perceived competence and for reading and math grades and were stronger for involvement than autonomy support indexes.

### Primary Analyses

*Maternal resources in Grade 6 and patterns of child adjustment across the transition.* To examine the hypotheses concerning relations between sixth-grade levels of maternal resources and changes in children's motivational resources, grades, and behavior over the transition, a series of multiple regression analyses were performed. First, each seventh-grade outcome was regressed onto the same outcome at sixth grade. By doing this, we could interpret the relations between variables entered subsequently and the outcomes as reflecting relations with changes in the outcomes. Next, gender and SES were included as control variables. Finally, the three sixth-grade involvement variables (school, cognitive, personal) and autonomy support were entered. In Table 3, we report the percentage of variance accounted for by the autocorrelation (same variable at two times) and control variables prior to entry of the maternal resources as well as for the full model. Given the fact that several of our outcome and predictor variables decreased over the transition, positive effects uncovered in the regression analyses are described as buffering effects (i.e., the presence of the parental resource is associated with a lack of decline rather than an increase in the child outcome).

TABLE 2  
Correlations Between Maternal Involvement and Autonomy Support and Child Outcome Variables at Sixth and Seventh Grades

	<i>Sixth Grade</i>				<i>Seventh Grade</i>			
	<i>School Involvement</i>	<i>Cognitive Involvement</i>	<i>Personal Involvement</i>	<i>Autonomy Support</i>	<i>School Involvement</i>	<i>Cognitive Involvement</i>	<i>Personal Involvement</i>	<i>Autonomy Support</i>
<i>Sixth grade</i>								
Perceived competence	.25 <sup>+</sup>	.48 <sup>***</sup>	.47 <sup>***</sup>	-.15	.34 <sup>**</sup>	.38 <sup>**</sup>	.24 <sup>+</sup>	-.17
Control understanding	-.06	.22	.22	.21	.18	.27 <sup>*</sup>	.22	.15
Self-worth	.16	.23	.32 <sup>*</sup>	.14	-.10	.38 <sup>**</sup>	.26 <sup>+</sup>	.13
Self-regulation	-.09	.13	.13	.35 <sup>**</sup>	.00	.21	.13	-.07
Reading	.33 <sup>*</sup>	.42 <sup>**</sup>	.35 <sup>**</sup>	.05	.31 <sup>*</sup>	.27 <sup>*</sup>	.55	.01
Math	.29 <sup>*</sup>	.42 <sup>**</sup>	.27 <sup>*</sup>	-.18	.34 <sup>*</sup>	.14	.45 <sup>**</sup>	-.17
Acting-out	.04	-.10	-.14	.01	-.01	-.00	-.32 <sup>*</sup>	.03
Learning problems	-.14	-.30 <sup>*</sup>	-.27 <sup>*</sup>	.10	-.13	-.11	-.47 <sup>***</sup>	.14
<i>Seventh grade</i>								
Perceived competence	.37 <sup>**</sup>	.55 <sup>***</sup>	.40 <sup>**</sup>	.01	.18	.54 <sup>***</sup>	.56 <sup>***</sup>	-.01
Control understanding	.12	.09	.24 <sup>+</sup>	.16	.01	.27	-.08	.36 <sup>**</sup>
Self-worth	.19	.30 <sup>*</sup>	.25 <sup>+</sup>	-.05	.03	.45 <sup>***</sup>	.45 <sup>***</sup>	.22
Self-regulation	-.01	.07	-.06	.10	-.08	.08	.15	.09
Reading	.27 <sup>*</sup>	.25 <sup>+</sup>	.37 <sup>**</sup>	-.04	.00	.24	.54 <sup>***</sup>	.47 <sup>***</sup>
Math	.25	.26 <sup>+</sup>	.14	.00	.11	.19	.41 <sup>***</sup>	.13
Acting-out	-.07	.08	-.23	-.35 <sup>*</sup>	.26 <sup>+</sup>	-.07	-.28 <sup>*</sup>	-.29 <sup>*</sup>
Learning problems	-.21	-.01	-.31 <sup>*</sup>	-.29 <sup>*</sup>	-.13	-.16	-.57 <sup>***</sup>	-.39 <sup>**</sup>

<sup>+</sup> $p < .10$ . <sup>\*</sup> $p < .05$ . <sup>\*\*</sup> $p < .01$ . <sup>\*\*\*</sup> $p < .001$ .

TABLE 3  
 Regression Analyses Predicting Changes in Motivational Resources and School Outcomes Over the Transition  
 From Maternal Involvement and Autonomy Support (Child Gender and SES)

Seventh-Grade Dependent Variables	Sixth-Grade Resource <sup>a</sup>		Gender		SES		Controls <sup>c</sup> Only	Maternal Autonomy Support		Sixth-Grade Predictors						Total R <sup>2</sup>
	F	β <sup>b</sup>	F	β <sup>b</sup>	F	β <sup>b</sup>		F	β <sup>b</sup>	School Involvement		Cognitive Involvement		Personal Involvement		
										F	β <sup>b</sup>	F	β <sup>b</sup>	F	β <sup>b</sup>	
Perceived competence	15.49***	.40	.26	-.38	5.81*	.30	.36	.86	.24	1.25	-.18	7.45**	.03	1.45	.71	.48
Control understanding	9.52**	.37	.01	-.14	4.22*	.31	.28	.14	-.15	2.86	.07	.58	.80	2.32	.90	.33
Self-worth	24.78***	.65	.49	.12	7.48**	.33	.46	.25	-.06	.40	-.06	1.04	.04	.38	-.08	.48
Self-regulation	4.66*	.33	1.42	-.23	.02	-.02	.14	.09	-.10	.51	-.13	.50	.39	.29	-.29	.19
Reading grades	20.83***	.32	2.14	-.16	9.33**	.44	.50	.65	.00	.46	-.20	4.25*	.41	10.54**	.32	.60
Math grades	32.54***	.71	.33	-.40	2.09	.21	.51	1.90	.27	1.51	-.03	1.25	-.11	2.42	-.34	.58
Acting-out	12.10***	.34	.80	.45	2.11	.22	.27	3.85*	-.52	.13	.33	.30	.18	3.63*	-.85	.40
Learning problems	21.47***	.52	.22	-.61	5.54*	-.31	.40	4.38 <sup>+</sup>	-.44	.12	-.29	.68	-.08	5.28*	-.47	.55

Note. SES = socioeconomic status.

<sup>a</sup>The sixth-grade level of each motivational resource was entered (e.g., for the perceived competence outcome at seventh grade, sixth-grade perceived competence was the sixth-grade resource). *F* values indicate stability over time. <sup>b</sup>Betas are standardized coefficients. <sup>c</sup>*R*<sup>2</sup> for autocorrelation and controls before entry of parenting variables.

<sup>+</sup>*p* < .10. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

For each child outcome there was significant continuity. In each case, when the sixth-grade outcome was added into the equation it predicted the seventh-grade outcome (all  $ps < .05$ ; see Table 3). There were several effects of SES—for perceived competence, control understanding, self-worth, and reading grades. In each case, children of parents in the high-SES group had higher scores than those of parents in the mid-low SES group.

There were several effects of maternal resources during the sixth grade on changes in child outcomes over the transition (see Table 3). Higher cognitive involvement at sixth grade was associated with lesser decreases in children's perceived competence over the transition. There were also strong effects of sixth-grade maternal resources on changes in grades and behavior across the transition. For reading grades, there were buffering effects of both cognitive and personal involvement. Higher levels of cognitive and personal involvement during the sixth grade were associated with lesser drops in grades across the transition. There were no effects of maternal resources on changes in control understanding, self-worth, self-regulation, or math grades.

Although for reading grades there were effects for mother involvement, for behavior problems there were buffering effects of autonomy support. Specifically, for both acting-out and learning problems, higher levels of maternal autonomy support were associated with lesser increases in problems. There was also a buffering effect of personal involvement for learning problems, with higher levels of personal involvement associated with lesser increases in learning problems over the transition.

*Changes in maternal resources across the transition and changes in child adjustment.* Given that neither maternal involvement nor autonomy support are static variables, we were also interested in whether changes in these maternal resources were associated with changes in children's motivation and performance outcomes over the transition. To examine this, multiple regressions, similar to those described previously, were conducted, substituting changes in maternal resources for sixth-grade maternal resources. Changes in maternal resources were calculated by subtracting the sixth-grade levels from the seventh-grade levels. For each child outcome at seventh grade, the same outcome at sixth grade was entered followed by SES and gender and the change scores for autonomy support and the three mother involvement variables.

Once again, sixth-grade outcomes were predictive of seventh-grade outcomes (all  $ps < .05$ ), and there were expected effects for gender and SES (see Table 4).



TABLE 4  
 Regression Analyses Predicting Changes in Motivation Resources and School Outcomes Over the Transition  
 From Changes in Maternal Involvement and Autonomy Support (Child Gender and SES)

Seventh-Grade Dependent Variables	Sixth-Grade Resource <sup>a</sup>		Gender		SES		Controls <sup>c</sup> Only	Change in Maternal Autonomy Support		Change in School Involvement		Change in Cognitive Involvement		Change in Personal Involvement		Total
	F	β <sup>b</sup>	F	β <sup>b</sup>	F	β <sup>b</sup>	R <sup>2</sup>	F	β <sup>b</sup>	F	β <sup>b</sup>	F	β <sup>b</sup>	F	β <sup>b</sup>	R <sup>2</sup>
Perceived competence	16.54***	.45	.05	.04	7.08**	.32	.36	.05	-.06	2.96	-.21	.08	-.02	2.72	.16	.47
Control understanding	11.49***	.49	.08	.05	5.77*	.28	.28	4.77*	.15	.06	.03	.20	.05	4.31*	.20	.45
Self-worth	26.48***	.61	1.21	-.12	5.70*	.32	.46	3.91*	.16	4.48*	-.32	.78	.10	.72	-.10	.55
Self-regulation	4.76*	.39	.74	.14	.02	.02	.14	.89	.11	.47	-.10	.16	-.03	.07	-.13	.15
Reading grades	29.62***	.80	.20	.11	12.78***	.44	.50	18.79***	.36	1.05	-.15	.39	-.11	.11	.04	.74
Math grades	31.36***	.78	1.11	-.10	3.06 <sup>+</sup>	.27	.51	.00	-.00	2.11	-.28	.59	.02	1.80	.11	.61
Acting-out	13.84***	.46	.12	-.06	4.07*	-.31	.27	.05	.05	7.79**	.40	2.84	-.32	.32	-.00	.46
Learning problems	24.20***	.71	.40	.05	6.41**	-.34	.40	.81	-.05	4.04*	.30	8.63**	-.35	.72	-.11	.56

Note. SES = socioeconomic status.

<sup>a</sup>The sixth-grade level of each motivational resource was entered (e.g., for the perceived competence outcome at seventh grade, sixth-grade perceived competence was the sixth-grade resource). *F* values indicate stability over time. <sup>b</sup>Betas are standardized coefficients. <sup>c</sup>*R*<sup>2</sup> for autocorrelation and controls before entry of parenting variables.

<sup>+</sup>*p* < .10. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

The majority of results for changes in maternal resources were consistent with a buffering effect, except for school involvement, the results of which will be discussed separately (see Table 4). Children whose mothers increased their autonomy support over the transition did not show the same negative declines in self-worth, control understanding, and reading grades as did other children. For self-worth there was also a strong buffering effect of personal involvement. Finally, for learning problems there was a buffering effect for changes in cognitive involvement. There were no effects for perceived competence or math grades.

For school involvement there was a reverse effect, indicating that the more mothers increased their school involvement over the transition, the more negative were the children's outcomes. Specifically, increases in school involvement were associated with decreases in control understanding and increases in acting-out and learning problems.

## DISCUSSION

There are a number of conclusions that follow from our results. First, as in other studies, we found that the transition from sixth to seventh grade was associated with a number of negative changes. But, as is increasingly evident in the literature, not all adjustment indexes showed negative changes, and there was much variability in children's responses to the transition from sixth to seventh grade. Second, parent resources, both prior to the transition and in response to it, do appear to be associated with children's negotiation of the transition. Third, the ways in which resources are associated with the transition differ both for different resources and different outcomes. Each of these topics are discussed in turn.

Our analyses of overall transition effects showed some, but not uniform, negative effects. Self-regulation and acting-out behavior did not change over the transition. The most striking negative effects were for school grades, with both reading and math grades declining precipitously. These effects, consistent with other studies, are most likely due to the stricter grading practices of seventh- as opposed to sixth-grade teachers (Simmons & Blyth, 1987). Although these declines are likely an artifact of grading practices, rather than real declines in achievement (Kavrell & Petersen, 1984), children may still be affected by this feedback, which is discrepant from what they were used to in elementary school. The marginally significant decline in perceived cognitive competence and significant decline in self-worth may be linked with such feedback.

Although there was no evidence that children's responses to the transition depended on gender, we did find evidence of the greater vulnerability

of middle- and low- as compared with high-SES children. Middle- and lower SES children declined more in self-worth and reading grades relative to high-SES children. This finding is consistent with the work of researchers indicating that individuals from lower SES backgrounds may be more vulnerable to stressful life events than individuals from higher SES backgrounds (e.g., McLeod & Kessler, 1990). One possible explanation for our findings is that SES is associated with other risk factors or resources that might buffer the transition. Maternal school involvement, which was related to SES in our study, may be one of these factors.

We also examined cross-time effects on the provision of maternal resources. Although there was a large drop in involvement at the school, mothers' personal and cognitive involvement did not decrease. The decline in school involvement is likely due to the different structure of the junior high, including multiple teachers and greater bureaucracy. Also, it is likely that more mothers work outside the home as children get older and therefore have less time available for school involvement. Mothers also became somewhat more controlling over the transition, especially with their boys. This finding is consistent with work by Steinberg (1988) on the onset of puberty.

Our primary analyses examined whether parent resources might buffer the transition to junior high. Our results provide an affirmative answer to this question for some of our outcomes. In particular, both cognitive and personal involvement of mothers in the sixth grade buffered children against declines in reading grades over the transition. Cognitive involvement of mothers in the sixth grade also buffered decreases in perceived competence. We have discussed cognitive involvement as the link between activities at home and in school and it is interesting that this kind of support appears to build children's confidence and protect them from declines in these more cognitive outcomes. Mothers high in personal involvement buffered their children against increases in learning problems and acting-out. When children have a history of parental support and encouragement, they appear more able to negotiate the new demands of school, such as those for organized learning habits and behaviors that create positive outcomes.

Although cognitive involvement was more predictive of cognitive outcomes such as grades and perceived competence, autonomy support at sixth grade was more associated with behavioral adjustment including levels of acting-out. We suggest that a home environment of autonomy support builds the self-regulation and autonomous functioning that allows children to be flexible in their responses to their environments. Another explanation is that children whose mothers are autonomy supportive and personally involved may respond to the more controlling

and impersonal atmosphere of junior high with less reactance, as their needs for autonomy and relatedness are met at home.

Although maternal involvement and autonomy support appear to prevent increases in behavior problems, these resources do not necessarily translate into increases in math scores, experiences of being autonomous in school, or control understanding. Of course, parent resources are only one set of factors that may determine children's responses to junior high. Peer and teacher factors also likely play a role. Bryk and Raudenbush (1988) have found that children's math achievement tends to be more a function of school factors, whereas reading achievement is more related to factors individual to the child. Further, when parents are involved in schoolwork they tend to be working on English rather than math activities (Epstein, 1988). Thus, it is wise in developing interventions to realize that some outcomes are more amenable to parent support than are others.

Changes in involvement and autonomy support were less associated with adjustment than were earlier levels of these resources. Part of this is likely due to the fact that maternal resources were relatively stable across time. Self-worth was buffered by changes in mothers' personal involvement and autonomy support. Changes in control understanding and reading grades were also buffered by increases in mothers' autonomy support. It may be that when parents respond with increased control to the challenges of children transitioning to junior high school, children's self-perceptions and performance suffer. Such increases in control, at a time of conflict around authority (Steinberg, 1988), may undermine children's confidence and sense that they can control their successes and failures.

Although we were most interested in how parent resources might influence children's outcomes, our findings for changes in school involvement offer some interesting indications for how parents might change in response to their children's behavior. As we noted, mothers overall decreased in school involvement. However, mothers who, relatively, increased their school involvement over the transition had children who increased in their disruptiveness and learning difficulties, and decreased in their control understanding. One possibility is that these mothers were being called into the junior high school to deal with problems. Thus, rather than having a preemptive or buffering effect, their involvement was a response to their children's problems. Another possibility is that mothers who increase their school involvement are experienced by children as taking control of their school experience at a time when they have an especially strong need for autonomy. The greater increase in acting-out may be a response to such controlling behavior. Although the results suggest the dynamic and bidirectional nature of family-school interaction, future studies might examine the nature of parents' school involvement (e.g.,

whether it is reactive to children's problems or proactive in nature). Such studies might help to disentangle the directionality in parent involvement–child outcome relations.

In conclusion, the results of our study highlight the important role that parent resources may play in buffering children's transitions to junior high. Both a history of cognitive and personal involvement appear to help children's self-concepts and reading grades. Autonomy support helps to prevent behavioral declines. Our data, of course, do not address whether there are optimal periods in children's school careers in which parental support is most key—we only examined levels at sixth grade. We have found that maternal involvement is relatively stable and it is possible that our results represent the cumulative effects of the provision of parental resources for children. Other long-term studies might be able to answer this question.

We acknowledge several limitations of our study. First, the size of our sample was small relative to most other studies. However, the multiple informants used in the study (increasing the reliability of measurement) and the in-depth nature of the measures may help to balance this concern. Further, the participation rate (45%) was less than optimal and the sample included a smaller percentage of minority families (25%) than the population from which the sample was drawn (45%). Thus, the sample was somewhat biased and may not reflect the full range of parent involvement or child outcome values in the community from which our sample was drawn. Because the small numbers prevent us from examining differences in our results for different ethnic groups, care should be taken in generalizing our results. The examination of complex interactions to determine if involvement and autonomy support were more predictive for certain groups than others awaits exploration in future studies. In addition, the study included only mothers. Fathers play key roles in children's school adjustment and should be considered in future studies. Finally we conducted one assessment in seventh grade, in the spring of the school year. Children may have looked somewhat different at the beginning of the school year (Lord et al., 1994). However, we were less interested in any temporary effects of the transition and more in whether our parent variables might predict longer term adjustment.

In sum, our findings support the idea that schools and families might capitalize on parent resources to help children negotiate transitions. Our results highlight the elementary years as a time when parents can build children's resources and prepare them for the coming changes and challenges. Junior high schools may begin to consider how their structures might accommodate increased proactive family involvement, including greater communication and dissemination of knowledge about children's school lives.

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