

# Why Does Parents' Involvement Enhance Children's Achievement? The Role of Parent-Oriented Motivation

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This research examined the idea that children's parent-oriented motivation underlies the benefits of parents' involvement on children's engagement and ultimately achievement in school. Beginning in the fall of 7th grade, 825 American and Chinese children (mean age = 12.73 years) reported on their parents' involvement in their learning as well as multiple dimensions of their motivation in school every 6 months until the end of 8th grade. Information on children's self-regulated learning strategies and grades was also obtained. Over time, the more involved parents were in children's learning, the more motivated children were to do well in school for parent-oriented reasons, which contributed to children's enhanced self-regulated learning and thereby grades. Although children's parent-oriented motivation was associated with their controlled and autonomous motivation in school, it uniquely explained the positive effect of parents' involvement on children's grades.

*Keywords:* parent involvement, parenting, motivation, achievement, longitudinal mediation

There is much evidence to support the idea that parents' involvement in children's learning (e.g., discussing children's schoolwork with them and attending parent–teacher conferences) facilitates children's learning and ultimately their achievement (for recent reviews, see Grolnick, Friendly, & Bellas, 2009; Pomerantz & Moorman, 2010). Compared with the support children receive from teachers and peers, the role parents play in children's learning is often considered not only unique but also essential (e.g., Furrer & Skinner, 2003; Grolnick & Ryan, 1992). Given the importance of parents' involvement in children's learning, a major question is that of what underlies its beneficial effect on children's achievement. In response to this question, multiple mechanisms have been proposed (for a review, see Pomerantz, Kim, & Cheung, 2012). Key is that parents' involvement enhances children's achievement through its influence on their motivation (Grolnick, Ryan, & Deci, 1991; Grolnick & Slowiaczek, 1994). In this vein, children's autonomous motivation and feelings of agency have been found to underlie the effect of parents' involvement on their achievement (e.g., Grolnick et al., 1991; Grolnick & Slowiaczek, 1994; Hong & Ho, 2005).

The current work was guided by the perspective that parents' involvement contributes to children's achievement via their moti-

vation. However, it represents a departure from prior work in its focus on the role of motivation that may be experienced by children largely as controlled. Specifically, children's *parent-oriented motivation* was examined as a mechanism through which parents' involvement facilitates children's achievement during the early adolescent years. The goal was to evaluate the model illustrated in Figure 1. It was postulated that when parents are involved in children's learning, children become motivated in school for parent-oriented reasons (e.g., to show parents they are responsible and gain parents' approval); such motivation heightens children's engagement, thereby enhancing their achievement. The model was tested in the United States and China to identify its validity in cultures in which the nature of parents' involvement in children's learning differs (e.g., Chao, 1994, 1996; Cheung & Pomerantz, 2011).

## Children's Parent-Oriented Motivation

Children's motivation in school is parent oriented when it is driven by a concern with meeting parents' expectations in the academic arena so as to gain their approval. From the perspective of self-determination theory (e.g., Deci & Ryan, 1985; Ryan & Deci, 2000), children's parent-oriented motivation is experienced by children as more controlled than autonomous. Parent-oriented motivation is likely to arise from external sources—namely, parents. As such, it may be characterized by externally regulated concerns such as a focus on avoiding punishment (e.g., withdrawal of privileges for poor grades) and obtaining rewards (e.g., money for good grades) from parents via academic endeavors. However, central to parent-oriented motivation may also be regulatory concerns that are introjected in that children have taken in parents' expectations, albeit not fully accepted them as their own. Such motivation is described in self-determination theory as relatively controlled, with a focus on circumventing guilt and anxiety and cultivating pride and self-worth, which may be driven in large part by concern with the approval of important others, such as parents.

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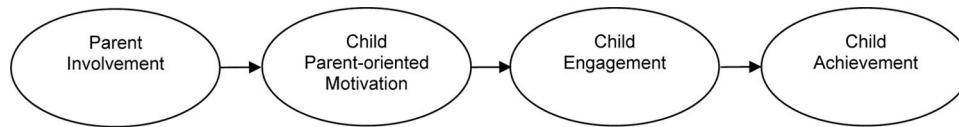


Figure 1. Guiding model of the effects of parents' involvement in children's learning on children's achievement via children's parent-oriented motivation and engagement in school.

Given the centrality of parents in children's lives, children's parent-oriented motivation may represent a unique form of controlled motivation. Because children are dependent on the resources that parents provide (see Clutton-Brock, 1991; Thompson et al., 2005), the relationships children have with parents are often the most fundamental in their lives. Indeed, parents remain central even as peers become prominent (e.g., Offer & Offer, 1975). Children's parent-oriented motivation may thus provide children with a sense of purpose that is particularly meaningful as children feel that they are contributing to realizing the goals of the major figures in their lives—goals to which these figures have often devoted substantial resources. Over time, as part of the socialization process, children may internalize parents' goals, such that they view them as personally valuable—what is referred to in self-determination theory as *identified motivation*. Hence, although children may largely experience parent-oriented motivation as controlled, they may also experience it as autonomous to some extent.

### Does Parents' Involvement Give Rise to Children's Parent-Oriented Motivation?

A major reason that parents' involvement has been considered beneficial for children's achievement is that it emphasizes the value of school to children (Epstein, 1988; Hill & Taylor, 2004). For example, when parents assist with homework or volunteer in the classroom, they are likely to convey to children that they believe school is important. In addition, as parents become involved, they may provide support for children in their academic endeavors (Grolnick, Deci, & Ryan, 1997; Grolnick & Slowiaczek, 1994). Grolnick and colleagues (1997) made the case that such support cultivates a sense of relatedness between children and parents. The ensuing trust may foster children's internalization of the value of school, so that children are ultimately autonomously motivated in that they endorse identified reasons for their engagement; intrinsic motivation (e.g., enjoyment and mastery)—considered by self-determination theory to be the most autonomous form of motivation—may also be cultivated as children's skills develop, thereby making academic endeavors pleasurable.

At the same time that parents' involvement fosters autonomous motivation, it may also foster controlled motivation as manifest in children's parent-oriented motivation. Parents' involvement represents a substantial commitment of resources to children (Grolnick et al., 1997; Grolnick & Slowiaczek, 1994). Children may feel the need to reciprocate such commitment, which along with parents' conveying to children that they view school as important may lead children to be motivated in school for parent-oriented reasons. In essence, children may attempt to return parents' dedication to their learning through their own dedication in the academic arena. Moreover, because parents' involvement may foster relatedness

between children and parents, children may be willing to make the effort of engaging to their fullest in school because of their trust in parents. Indeed, the closer children feel to parents, the more they are motivated in school by parent-oriented reasons (Pomerantz, Qin, Wang, & Chen, 2011).

### Does Children's Parent-Oriented Motivation Facilitate Their Engagement and Achievement?

Although parent-oriented motivation may be experienced by children largely as controlled, it may provide them with purpose in the academic context that may foster their engagement, thereby contributing to their achievement (Pomerantz et al., 2012). This may be particularly true as children move into adolescence, given that children's interest in school often wanes during this phase of development. Indeed, it is common for children in this phase of development to view school as lacking in not only enjoyment but also significance (e.g., Eccles et al., 1989; Harter, 1981; Wang & Pomerantz, 2009). Although controlled motivation is considered problematic (for a review, see Deci, Koestner, & Ryan, 1999), it may be beneficial when children are not already autonomously motivated as is often the case during adolescence. Controlled motivation may get children engaged even if only superficially, which may enhance their achievement, at least when deep processing is not necessary (Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005).

The evidence to date is consistent with the idea that parent-oriented motivation among children facilitates their engagement and ultimately achievement. Studying children in the United States and China as they entered adolescence, Pomerantz and colleagues (2012) found that the more motivated children were in school for parent-oriented reasons as they began middle school in seventh grade and the more they sustained such motivation over the seventh and eighth grades, the more engaged they were in school at the end of eighth grade, taking into account their earlier engagement; children's parent-oriented motivation appeared to enhance their grades as well. Notably, these effects were evident over and above children's perceptions of the quality of their relationships with parents. Children's feelings of obligation toward the family, which may reflect a sense of responsibility similar to that of parent-oriented motivation (Pomerantz et al., 2012), also have been linked to enhanced engagement, albeit not grades, among children during adolescence (e.g., Fuligni, Tseng, & Lam, 1999; Fuligni & Zhang, 2004; Pomerantz et al., 2012).

### Does Culture Matter?

A recent analysis of the participants in psychological research published in the top journals in six areas of psychology indicated that approximately 95% of participants came from Western coun-

tries (Arnett, 2008). Moreover, a growing body of research suggests that although there are substantial commonalities in the psychological processes of individuals in Western and non-Western countries (e.g., Chirkov, Ryan, Kim, & Kaplan, 2003; Pomerantz & Wang, 2009), there are also divergences (for a review, see Henrich, Heine, & Norenzayan, 2010). The issue of whether culture matters is of particular relevance in considerations of the proposed model (see Figure 1) as prior theory and research indicate that the nature of parents' involvement in children's learning may not be universal. Focusing on the United States and China, investigators have argued that because of distinct cultural ideologies about learning and parents' role in it, American and Chinese parents often become involved in children's learning differently. Chao (1994) maintained that the Chinese notion of *guan* is key to Chinese parenting. *Guan* entails meanings of "to love" and "to govern" with an emphasis on ensuring children meet societal standards, particularly those in the academic arena (Chao, 1994; Tobin, Wu, & Davidson, 1989). This may lead parents' involvement to be more controlling in China than the United States where promoting children's autonomy is a priority when it comes to children's learning (Chao, 1996). Indeed, Chinese, but not American, parents who are involved in children's learning also tend to be controlling (Cheung & Pomerantz, 2011).

Given such differences in the nature of parents' involvement in children's learning, a key question is whether the effects of parents' involvement on children's parent-oriented motivation and their ensuing engagement and achievement are similar in the two countries. On the one hand, it is possible that the heightened control of Chinese (vs. American) parents' involvement leads to heightened controlled motivation, particularly in terms of children's parent-oriented motivation, due to the Chinese emphasis on filial piety (Ho, 1996; Wang & Hsueh, 2000), which is often accomplished through doing well in school in China (e.g., Chao & Tseng, 2002; Li, 2005; Tweed & Lehman, 2002). On the other hand, in both countries, parents' involvement may signal their commitment of resources, which children may feel responsible for reciprocating. In line with this possibility, the effects of parents' involvement as well as children's parent-oriented motivation on children's engagement and achievement do not differ in the United States and China (Cheung & Pomerantz, 2011; Pomerantz et al., 2012).

### Overview of the Current Research

Focusing on the United States and China, we investigated the idea that children's parent-oriented motivation underlies the benefits of parents' involvement on children's engagement and ultimately achievement. Given that children often lose interest in school as they enter adolescence, their parent-oriented reasons for doing well in school may be particularly important in keeping them engaged in school during this phase of development. Thus, at four time points over the seventh and eighth grades, American and Chinese children reported on their parents' involvement in learning as well as their motivation and engagement in school (i.e., use of self-regulated learning strategies). Children's grades in school were also obtained. Such a design provided an ideal context for examining the hypothesized pathway (see Figure 1): Parents' involvement in chil-

dren's learning facilitates children's parent-oriented motivation, which, in turn, enhances children's engagement, thereby contributing to children's achievement.

The investigation of this pathway was placed in a broader context along two lines. First, we investigated the extent to which parent-oriented motivation represents a controlled versus autonomous form of motivation indirectly by examining the association of parent-oriented motivation in school with other forms of motivation in school, varying along the autonomy continuum posited by self-determination theory. We anticipated that parent-oriented motivation would be substantially overlapping with extrinsic (e.g., avoidance of punishment or attainment of rewards) and introjected (e.g., avoidance of guilt and attainment of pride) motivation that are both experienced as controlled (albeit, introjected less so as it represents an internal form of regulation). Although parent-oriented motivation may also be experienced as autonomous—for example, children may come to view school as personally valuable (i.e., identified motivation)—it was anticipated that the overlap would be smaller than that with controlled motivation. Given that parent-oriented motivation in school revolves around children's relationships with their parents, we expected that despite the overlap with other forms of motivation in school, it would represent a distinct form of motivation.

Second, although children's parent-oriented motivation may be a major mechanism by which parents' involvement shapes their achievement, it is unlikely to be the only one. Including in our analyses children's controlled and autonomous motivation in school in addition to their parent-oriented motivation in this context allowed us to examine if this potential motivational pathway was accompanied by alternative pathways. Moreover, it provided a test of the idea that parent-oriented motivation may be a unique form of controlled motivation, which unlike other forms contributes positively to children's engagement and subsequently to their achievement above and beyond any overlap it may have with other forms of children's motivation in school. In examining all of these issues, we evaluated whether there are differences between the United States and China.

The current research report builds on several earlier reports from the same project (Cheung & Pomerantz, 2011; Pomerantz et al., 2011; Wang & Pomerantz, 2009). These reports investigated the trajectories over time of the key constructs included in this report as well as the role of each in children's academic adjustment (e.g., achievement). However, going beyond these earlier reports, as well as prior research, the central goal of the current report was to examine the role of children's parent-oriented motivation in mediating the effects of parents' involvement on children's achievement. That is, we evaluated the *mechanisms* through which parents' involvement in children's learning contributes to children's achievement—an issue of much import but beyond the scope of the earlier reports. In this context, the current report also extends prior efforts in that we examined whether parents' involvement fosters children's parent-oriented motivation. This is a significant endeavor given that prior research has documented the beneficial effects of such motivation on children's engagement and achievement in school during early adolescence (Pomerantz et al., 2012), but has not provided insight into its antecedents.

## Method

### Participants

The University of Illinois U.S.–China Adolescence Study began when children entered a new school in seventh grade and concluded at the end of eighth grade in the United States and China (e.g., Pomerantz, Qin, Wang, & Chen, 2009; Wang & Pomerantz, 2009). Participants were 374 American children (187 boys and 187 girls; mean age = 12.78 years in the fall of seventh grade) and 451 Chinese children (240 boys and 211 girls; mean age = 12.69 years in the fall of seventh grade). In each country, children attended either average-achieving or above-average-achieving public schools in primarily working-class or middle-class areas. The American children attended one of two public schools consisting of the seventh and eighth grades in the suburbs of Chicago. Reflecting the ethnic composition of these areas, participants were primarily European American (88%) with 9% Hispanic American, 2% African American, and 1% Asian American. The Chinese children attended one of two public schools in the suburbs of Beijing; one school consisted of the seventh through ninth grades and the other of the seventh through 12th grades. Over 95% of the residents in these areas were of the Han ethnicity (Beijing Municipal Bureau of Statistics, 2005), a percentage that is slightly above the 92% for the country as a whole (China Population and Development Research Center, 2001). An opt-in consent procedure was used in which parents provided permission for children to participate. In the United States, 64% of parents allowed their children to participate, and in China, 59% of parents did so (for more information on the two samples, see Qin, Pomerantz, & Wang, 2009; Wang & Pomerantz, 2009).

### Procedure

Children completed a set of questionnaires during two 45-min sessions four times approximately 6 months apart: Fall of seventh grade (Wave 1), spring of seventh grade (Wave 2), fall of eighth grade (Wave 3), and spring of eighth grade (Wave 4). Instructions and items were read aloud to children in their native language in the classroom by trained native research staff. Children received a small gift (e.g., a calculator) as a token of appreciation at the end of each session. The average attrition rate over the entire study was 4% (2% in the United States and 6% in China). Over 85% of children had data at all four waves of the study for all of the analyses, with over 98% having data at two or more waves for all of the analyses. Comparison of the constructs at the first wave included in the present analyses between children with and without complete data revealed only that children with complete data had better grades,  $t(818) = 2.01, p < .05$ . The procedures were approved by the institutional review boards of the University of Illinois and Beijing Normal University.

### Measures

Measures of the constructs under examination used in prior research were comprehensively consulted. Those representing the most refined conceptualizations and operationalizations were chosen to constitute the item pool. The measures were originally written in English. Standard translation and back-translation pro-

cedures (Brislin, 1980) were employed to ensure equivalence between the English and Chinese versions. Minor modifications were made to some items so that they would be relevant to the lives of children not only in the United States but also in China (see Cheung & Pomerantz, 2011). Prior reports of this research provide evidence for the concurrent, discriminant, and predictive validity of the measures in the two countries (e.g., Cheung & Pomerantz, 2011; Wang & Pomerantz, 2009). For example, the measure of children's parent-oriented motivation is positively associated with their feelings of obligation to parents as well as the quality of their relationships with them, but not to such an extent as to suggest that such motivation is fully overlapping with these constructs (Pomerantz, et al., 2011).

Factorial and intercept invariance is essential and sufficient for making valid comparisons of the associations and means of the constructs (Little, 1997; Steenkamp & Baumgartner, 1998). Tests of such measurement equivalence for the measures included in this report have been presented in prior reports (Cheung & Pomerantz, 2011; Pomerantz et al., 2011; Wang & Pomerantz, 2009). As described in these reports, we conducted a series of two-group confirmatory factor analyses (CFAs) in the context of structural equation modeling (SEM) to examine the factorial and intercept equivalence of the measures between the United States and China as well as over the four waves of the study. The measures included in the current report have factorial and intercept invariance across the United States and China as well as the four waves of the study, allowing for valid comparisons. Table 1 presents the means, standard deviations, and correlations among the central constructs of the guiding model (see Figure 1).

**Parents' involvement in children's learning.** Parents' involvement in children's learning was assessed with 10 items (e.g., "My parents help me with my homework when I ask," and "My parents try to get to know the teachers at my school") adapted from prior research (Chao, 2000; Kerr & Stattin, 2000; Kohl, Lengua, McMahon, & the Conduct Problems Prevention Research Group, 2000; Stattin & Kerr, 2000). In line with Grolnick and Slowiaczek's (1994) definition of parents' involvement in children's learning, the items were designed to measure various forms of involvement (e.g., attendance of parent–teacher conferences, discussion of school with children, and assistance with homework) reflecting parents' commitment of resources to children in the academic arena. Children indicated the extent to which each of the statements was true (1 = *not at all true*, 5 = *very true*) of their parents. The 10 items were combined, with higher numbers reflecting greater involvement ( $\alpha$ s ranged from .83 to .85 in the United States and from .77 to .83 in China).

**Parent-oriented motivation in school.** To assess children's parent-oriented motivation in school, we modified six items from the Social Approval and Responsibility Scales of Dowson and McInerney's (2004) Goal Orientation and Learning Strategies Survey (GOALS-S) so that they referred to parents; six additional items were also created. Children indicated how true (1 = *not at all true*, 5 = *very true*) each of the 12 statements was of them (e.g., "I try to do well because I want my parents' approval," and "I try to do well to show my parents that I am being responsible"). The items were combined, with higher numbers indicating greater parent-oriented motivation in school ( $\alpha$ s ranged from .92 to .95 in the United States and from .90 to .94 in China).

Table 1  
Associations Among the Central Constructs

Construct/wave	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Parent involvement																
1. Wave 1	—	.50	.54	.46	.26	.24	.25	.16	.40	.33	.31	.32	.01	.04	.07	.10
2. Wave 2	.64	—	.59	.55	.19	.33	.22	.23	.22	.35	.30	.30	.02	.05	.06	.06
3. Wave 3	.51	.60	—	.63	.18	.13	.30	.23	.25	.31	.39	.41	.07	.10	.11	.12
4. Wave 4	.48	.45	.49	—	.10	.16	.19	.24	.21	.28	.35	.37	.05	.05	.09	.11
Parent-oriented motivation																
5. Wave 1	.16	.19	.09	.10	—	.57	.51	.40	.32	.23	.26	.19	.00	-.01	.01	.02
6. Wave 2	.28	.37	.19	.21	.52	—	.58	.44	.30	.32	.37	.24	.05	.04	.09	.09
7. Wave 3	.20	.24	.29	.24	.47	.63	—	.55	.27	.30	.46	.34	.01	.05	.09	.05
8. Wave 4	.13	.16	.17	.37	.34	.54	.63	—	.18	.23	.38	.44	.05	.08	.07	.08
Self-regulated learning																
9. Wave 1	.45	.29	.29	.23	.26	.24	.27	.19	—	.58	.53	.46	.10	.11	.14	.21
10. Wave 2	.48	.40	.38	.26	.20	.37	.35	.28	.63	—	.62	.60	.18	.22	.23	.25
11. Wave 3	.38	.32	.41	.30	.17	.41	.50	.40	.57	.68	—	.68	.10	.15	.14	.20
12. Wave 4	.28	.26	.33	.39	.16	.37	.36	.48	.52	.58	.67	—	.17	.20	.18	.25
Grades																
13. Wave 1	.09	.13	.22	.14	.04	.06	.12	.11	.24	.19	.13	.24	—	.91	.82	.88
14. Wave 2	.12	.15	.22	.16	.01	.08	.12	.13	.24	.20	.22	.26	.92	—	.86	.91
15. Wave 3	.11	.15	.22	.15	.07	.15	.16	.14	.24	.24	.26	.27	.82	.87	—	.88
16. Wave 4	.12	.15	.20	.16	.05	.14	.17	.17	.28	.24	.28	.28	.80	.84	.92	—
United States																
Mean	3.61	3.44	3.43	3.37	3.71	3.52	3.40	3.38	3.38	3.22	3.19	3.14	—	—	—	—
Standard deviation	0.71	0.80	0.76	0.76	0.90	1.01	0.99	0.96	0.81	0.85	0.88	0.88	—	—	—	—
China																
Mean	3.79	3.69	3.67	3.64	3.46	3.49	3.60	3.55	3.34	3.25	3.31	3.31	—	—	—	—
Standard deviation	0.62	0.71	0.68	0.68	0.87	0.92	0.85	0.88	0.69	0.80	0.77	0.77	—	—	—	—

Note. Correlations for the American sample are presented in the lower triangle; those for the Chinese sample are presented in the upper triangle. Correlations with absolute values greater than .10 are significant ( $p < .05$ ). Grades were standardized within schools with means equal to 0 and standard deviations equal to 1.

**Controlled and autonomous motivation in school.** Children’s controlled and autonomous motivation was assessed with the Academic Self-Regulation Questionnaire (Ryan & Connell, 1989), which consists of statements describing four types of reasons for engaging in various academic activities. Across the activities, there are nine statements about extrinsic reasons (e.g., “I do my homework because I’ll get in trouble if I don’t”;  $\alpha$ s ranged from .80 to .88 in the United States and .67 to .77 in China), nine about introjected reasons (e.g., “I work on my classwork because I’ll be ashamed of myself if it doesn’t get done”;  $\alpha$ s ranged from .87 to .91 in the United States and .78 to .87 in China), seven about

identified reasons (e.g., “I work on my classwork because it’s important to me to do so”;  $\alpha$ s ranged from .86 to .91 in the United States and .84 to .90 in China), and seven about intrinsic reasons (e.g., “I do my homework because it’s fun”;  $\alpha$ s ranged .87 to .90 in the United States and .83 to .94 in China). Children indicated how true (1 = *not at all*; 5 = *very*) each statement was of them.

For some analyses (see Table 2), the four sets of reasons were examined separately, with higher numbers on each scale indicating greater endorsement of the reasons. However, for other analyses (i.e., those using SEM), composites were employed to eliminate multicollinearity due to the substantial associations between the

Table 2  
Associations Between Children’s Parent-Oriented Motivation and Other Forms of Motivation in School

Form of motivation	Wave 1		Wave 2		Wave 3		Wave 4	
	United States	China	United States	China	United States	China	United States	China
Controlled								
Extrinsic	.57 <sub>a1</sub> ***	.53 <sub>a1</sub> ***	.61 <sub>a1</sub> ***	.37 <sub>a2</sub> ***	.56 <sub>a1</sub> ***	.49 <sub>a1</sub> ***	.60 <sub>a1</sub> ***	.55 <sub>a1</sub> ***
Introjected	.50 <sub>a1</sub> ***	.58 <sub>a1</sub> ***	.61 <sub>a1</sub> ***	.46 <sub>b1</sub> ***	.54 <sub>a1</sub> ***	.55 <sub>a1</sub> ***	.57 <sub>a1</sub> ***	.56 <sub>a1</sub> ***
Autonomous								
Identified	.25 <sub>b1</sub> ***	.28 <sub>b1</sub> ***	.39 <sub>b1</sub> ***	.28 <sub>a1</sub> ***	.40 <sub>a1</sub> ***	.38 <sub>b1</sub> ***	.44 <sub>b1</sub> ***	.38 <sub>b1</sub> ***
Intrinsic	.12 <sub>c1</sub> *	.22 <sub>b1</sub> ***	.32 <sub>b1</sub> ***	.20 <sub>c1</sub> ***	.30 <sub>b1</sub> ***	.29 <sub>c1</sub> ***	.31 <sub>c1</sub> ***	.20 <sub>c1</sub> ***

Note. Different letter subscripts indicate differences ( $ps < .05$ ) among correlations within each wave for each country; different number subscripts indicate differences ( $ps < .05$ ) between countries in parallel correlations.  
\*  $p < .05$ . \*\*\*  $p < .001$ .

extrinsic and introjected reasons ( $r$ s ranged from .51 to .63 in the United States and .65 to .74 in China,  $ps < .001$ ) as well as the identified and intrinsic reasons ( $r$ s ranged from .64 to .68 in the United States and .53 to .77 in China,  $ps < .001$ ). Following Grolnick and Ryan (1987), we created a controlled motivation composite by weighting the extrinsic reasons by two and the introjected reasons by one, with higher numbers indicating heightened controlled motivation; we created an autonomous motivation composite by weighting the intrinsic reasons by two and the identified reasons by one, with higher numbers indicating greater autonomous motivation.

**Self-regulated learning strategies.** Children's engagement in school as manifest in their use of self-regulated learning strategies was assessed with Dowson and McInerney's (2004) GOALS-S. Three subscales measure children's meta-cognitive strategies: six items assess monitoring (e.g., "I check to see if I understand the things I am trying to learn"), six assess planning (e.g., "I try to plan out my schoolwork as best as I can"), and six assess regulating (e.g., "If I get confused about something at school, I go back and try to figure it out"). Two subscales measure children's cognitive strategies: six items assess rehearsal (e.g., "When I want to learn things for school, I practice repeating them to myself"), and six assess elaboration (e.g., "I try to understand how the things I learn in school fit together with each other"). Children indicated the extent to which each of the 30 statements was true (1 = *not at all true*; 5 = *very true*) of them. The five subscales were substantially associated ( $r$ s ranged from .56 to .86 in the United States and .50 to .80 in China,  $ps < .001$ ); thus, they were combined, with higher numbers representing greater engagement ( $\alpha$ s ranged from .96 to .97 in the United States and .93 to .96 in China).

**Grades.** Children's grades in the four core subjects (language arts, math, science, and social studies in the United States; language arts, math, biology, and English in China) were obtained from schools. Grades in the American schools were originally in letters and were converted to numbers (ranging from F = 0 to A+ = 12). In the Chinese schools, grades were originally numerical, ranging from 0 to 100 in one school and from 0 to 120 in the other. In both the United States and China, grades were standardized within schools so that differences in the grading systems of the schools could be taken into account. The mean across the four subjects was taken, with higher numbers reflecting better grades.

## Results

Three sets of analyses were conducted. First, we investigated the nature of parent-oriented motivation in school by testing if such motivation is distinct from the other forms of motivation we assessed—that is, extrinsic, introjected, identified, and intrinsic motivation in school. We also examined the extent to which children experienced parent-oriented motivation as controlled versus autonomous. Second, we tested the idea that parent-oriented motivation underlies the effects of parents' involvement on children's engagement and achievement. Key to this endeavor was identifying the direction of the effects by taking into account possible confounding concurrent and temporal associations. Third, to evaluate whether the role of parent-oriented motivation is unique, we examined the proposed model in context by including

in the analyses the effects of the other forms of motivation we assessed.

We conducted the majority of the analyses within a latent SEM framework using Mplus 6.0 (Muthén & Muthén, 1998–2010), which utilizes full information maximum likelihood (FIML) estimation in the presence of missing data; FIML provides more reliable standard errors to handle missing data under a wide range of conditions than does either listwise and pairwise deletion or mean imputation (Arbuckle, 1996; Wothke, 2000). To identify differences between the United States and China, we compared unconstrained models to more parsimonious models with constraints of equal coefficients imposed between the two countries on the effects of interest (see later discussion); for each set of models, the constraints were imposed one by one and then simultaneously. A significant difference ( $\Delta\chi^2$ ) between an unconstrained model and a more parsimonious constrained model indicates a country difference.

### Is Parent-Oriented Motivation a Form of Controlled Motivation?

**Distinctiveness of parent-oriented motivation.** To identify the nature of parent-oriented motivation in school, we first examined whether it is distinct from extrinsic, introjected, identified, and intrinsic motivation in school. To this end, we conducted CFAs in the context of SEM. These models were nested in that for each set an unconstrained model was compared with a constrained model that had one less free parameter. Two randomly determined parcels were created as indicators for each construct (for the pros and cons of using individual items versus parcels of items, see Little, Cunningham, Shahar, & Widaman, 2002). At each wave, two-factor models comprising latent constructs of parent-oriented motivation and one of the other forms (e.g., extrinsic) of motivation were specified. In the unconstrained models, the correlation between the two latent motivation constructs was allowed to be freely estimated, thereby representing a two-factor model; in the constrained models, the correlation was forced to be one, thereby representing a one-factor model. A significant difference between an unconstrained (i.e., two-factor) and its more parsimonious constrained (i.e., one-factor) model indicates that the two-factor solution fit the data better, supporting the notion of parent-oriented motivation as a distinct form of motivation.

Within each country at each of the four waves, the unconstrained models fit the data adequately,  $\chi^2$ s ( $dfs = 26$ )  $> 65$ ; comparative fit indices (CFIs)  $> .96$ ; Tucker–Lewis indices (TLIs)  $> .95$ ; root-mean-square errors of approximation (RMSEAs)  $< .10$ . The constrained models, in which the correlation between the two motivation constructs was forced to be one, however, did not,  $\chi^2$ s ( $dfs = 28$ )  $> 643$ ; CFIs  $< .85$ ; TLIs  $< .81$ ; RMSEAs  $> .20$ . Moreover, the unconstrained models consistently fit better than the constrained models,  $\Delta\chi^2$ s ( $dfs = 2$ )  $> 20$ ,  $ps < .001$ , indicating that parent-oriented motivation in school is distinct from each of the four other forms of motivation in school. All standardized factor loadings for the unconstrained models were above .65 at each of the four waves in the two countries. The correlations between the two latent constructs in the unconstrained models ranged from .14 to .63 in the United States and from .18 to .56 in China. Two-group nested models at each wave comparing the unconstrained models with constrained models in which the

correlation between the two latent constructs was forced to be equal between the two countries consistently indicated that the correlation between children's parent-oriented motivation and the other motivation constructs was similar in the two countries,  $\Delta\chi^2$ s ( $dfs = 1$ )  $< 1$ , with the exception that at Wave 2 parent-oriented motivation was more strongly associated with extrinsic motivation in the United States than China,  $\Delta\chi^2$  ( $df = 1$ ) = 7.01,  $p < .01$ .

**Parent-oriented motivation as controlled versus autonomous.** To identify the extent to which parent-oriented motivation is experienced by children as controlled, we evaluated the concurrent associations between parent-oriented motivation and the other motivation constructs. As shown in Table 2, across all four waves of the study, parent-oriented motivation in school was positively associated with children's extrinsic, introjected, identified, and intrinsic reasons for doing well in school in both the United States and China. However, as anticipated, in both countries, parent-oriented motivation was consistently more strongly associated with the two forms of controlled motivation than the two forms of autonomous motivation, as indicated by dependent-correlation comparisons using Fisher's  $r$ -to- $z$  transformations,  $ts > 4.06$ ,  $ps < .001$ , with only two (out of a possible 32) exceptions,  $ts < 1.64$ ,  $ns$ .

Parent-oriented motivation was similarly associated with the two forms of controlled motivation across the four waves in both countries,  $ts < 1.71$ ,  $ns$ , with only one (out of a possible eight) exception,  $t = 2.60$ ,  $p < .01$ . Comparison of the associations of parent-oriented motivation and the two forms of autonomous motivation, however, indicated that with two (out of a possible eight) exceptions,  $ts < 1.83$ ,  $ns$ , parent-oriented motivation was more strongly associated with identified than with intrinsic motivation in both the United States and China,  $ts > 2.47$ ,  $ps < .01$ . There was little evidence that the association between parent-oriented motivation and the other forms of motivation differed in the United States and China: Consistent with the CFAs, independent-correlation comparisons using Fisher's  $r$ -to- $z$  transformations consistently yielded no differences between the two countries,  $ts < 1.45$ ,  $ns$ , with one (out of a possible 16) exception,  $t = 4.51$ ,  $p < .001$ .

### Does Parent-Oriented Motivation Mediate the Effects of Parents' Involvement?

In testing the idea that parent-oriented motivation underlies the effects of parents' involvement on children's engagement and achievement, we focused on the key constructs as they occurred in the proposed temporal progression (see Figure 1) such that parents' involvement in children's learning was included at Wave 1 with children's parent-oriented motivation, self-regulated learning, and grades targeted at Waves 2, 3, and 4, respectively. With the exception of grades, latent constructs were used in the SEM analyses. For each construct, two parcels were used as indicators. The parcels were determined conceptually when there were meaningful conceptual distinctions between items that would yield two fairly evenly divided parcels (i.e., self-regulated learning); when this was not the case, the parcels were determined randomly (i.e., parents' involvement and children's parent-oriented motivation).

**Total effect over time.** We conducted sets of two-group nested SEM analyses to examine if parents' involvement is predictive of children's achievement over time: We evaluated the

effect of parents' involvement at Wave 1 on children's grades at Wave 4, adjusting for children's earlier (Wave 1) grades and took the concurrent associations between parents' involvement and children's grades at Wave 1 into account by allowing the variances of the two to correlate. The unconstrained (i.e., parameters were freely estimated) and constrained (i.e., the effect of parents' involvement on children's grades was forced to be equal between the United States and China) models fit the data well,  $\chi^2$ s ( $dfs > 4$ )  $> 1.5$ , CFIs  $> .99$ ; TLIs  $> .99$ ; RMSEAs  $< .01$ . Two-group nested model comparisons indicated that the effects were similar in the United States and China,  $\Delta\chi^2$ s ( $dfs = 1$ )  $< 1$ . In line with the findings reported in Cheung and Pomerantz (2011), in which growth curve modeling was employed to evaluate the effects of parents' involvement, parents' involvement was predictive of higher grades among children over time,  $\beta$ s = .07,  $ts = 3.43$ ,  $ps < .05$ .

**Mediated pathway over time.** We tested the viability of the proposed mediating role of parent-oriented motivation with additional sets of two-group nested SEM analyses. Statistical adjustments of the effects of the mediated pathway were included. Specifically, children's parent-oriented motivation, self-regulated learning strategies, and grades assessed six months earlier than each construct as specified in the pathway being tested were included to adjust for autoregressive effects. In addition, direct effects (e.g., the effects of parents' involvement on children's grades) were included (see dashed lines in Figure 2). Concurrent associations between constructs were taken into account by allowing variances (Wave 1) or error variances (Wave 2, 3, and 4) of the constructs to correlate within each wave. Significance of the indirect pathways was evaluated by the delta method using Mplus.

The unconstrained (i.e., parameters were freely estimated) and constrained (i.e., the key parameters were forced to be equal between the two countries) models fit the data adequately,  $\chi^2$ s ( $dfs > 82$ )  $> 251$ , CFIs  $> .98$ ; TLIs  $> .97$ ; RMSEAs  $< .07$ . Two-group nested model comparisons indicated that the effects comprising the indirect pathways were similar in the United States and China,  $\Delta\chi^2$ s ( $dfs = 1$ )  $< 2$ ,  $ns$ ; thus, all such effects were constrained to be equal between the two countries in the final model. As shown in Figure 2, parents' involvement at Wave 1 predicted heightened parent-oriented motivation among children at Wave 2, with children's earlier (Wave 1) parent-oriented motivation taken into account,  $ts = 4.61$ ,  $ps < .001$ . In turn, children's parent-oriented motivation at Wave 2 predicted heightened self-regulated learning among children at Wave 3, with children's earlier (Wave 2) self-regulated learning taken into account,  $ts = 4.60$ ,  $ps < .001$ . Children's self-regulated learning at Wave 3 predicted enhanced grades among children at Wave 4 over and above their earlier (Wave 3) grades,  $ts = 3.12$ ,  $ps < .01$ . The delta method indicated that the indirect pathway from parents' involvement to children's parent-oriented motivation to their self-regulated learning to their grades was significant in the United States and China,  $zs = 2.25$ ,  $ps < .05$ .

### Is the Role of Parent-Oriented Motivation Unique?

Given that children's parent-oriented motivation was associated with their controlled and autonomous motivation in school, it is possible that the effects of children's parent-oriented motivation documented earlier were simply due to such motivation. To eval-

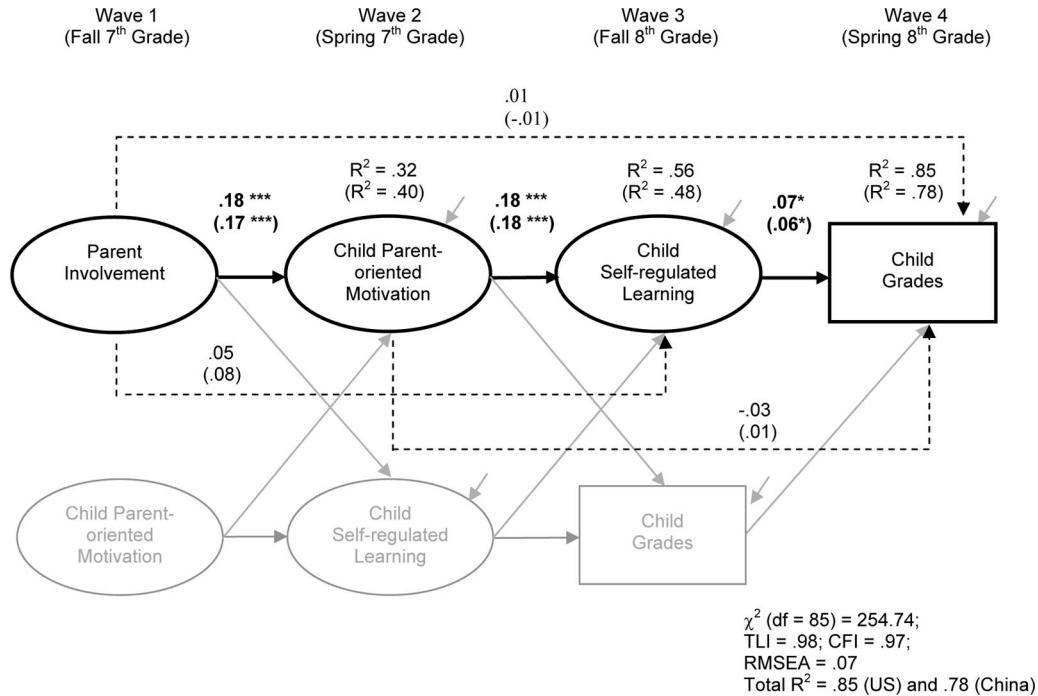


Figure 2. Children’s parent-oriented motivation and ensuing engagement in school underlie the effect of parents’ involvement in children’s learning on children’s achievement. For ease of presentation, within-wave covariances are not shown. Based on the chi-square difference tests, all paths for the indirect effect were constrained to be equal between the United States and China. American standardized estimates are not in parentheses; Chinese standardized estimates are in parentheses. *df* = degrees of freedom; TLI = Tucker–Lewis index; CFI = comparative fit index; RMSEA = root-mean-square error of approximation. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

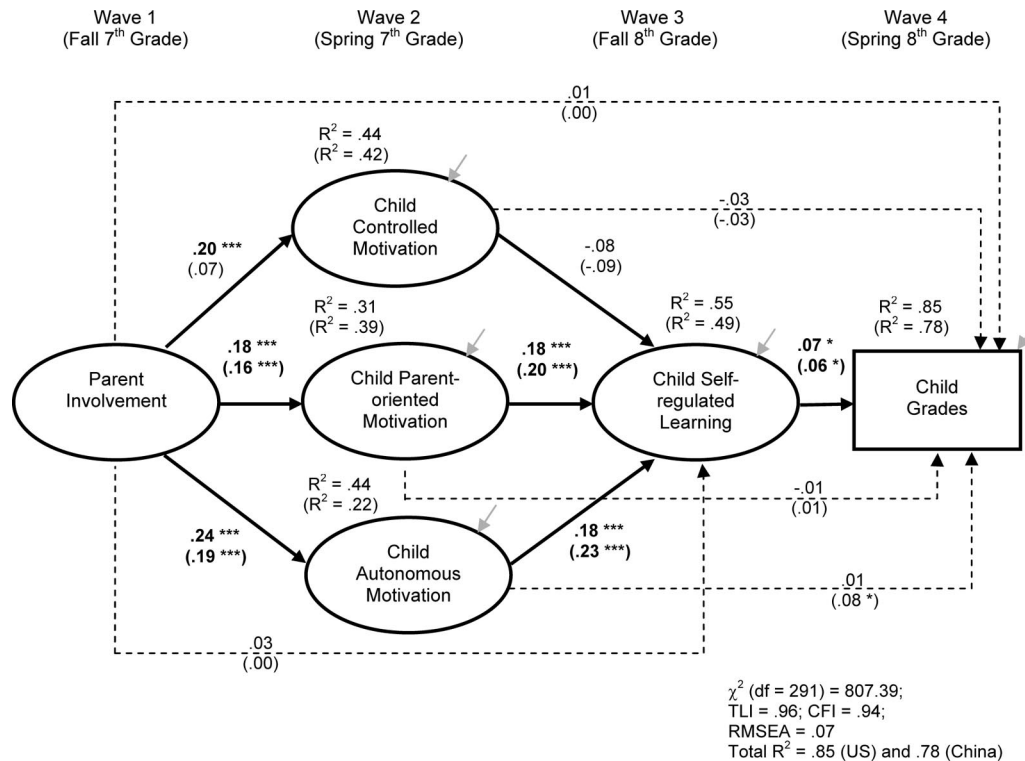
uate whether children’s parent-oriented motivation represents a unique mechanism by which parents’ involvement contributes to children’s achievement, we included children’s controlled and autonomous motivation in school in the model examined in the previous set of SEM analyses. Each of the two forms of motivation was included as a latent construct, with the two individual scales as indicators for each construct. As shown in Figure 3, parents’ involvement at Wave 1 was specified to predict the two forms of motivation among children at Wave 2 (in addition to children’s parent-oriented motivation), which were specified to predict children’s self-regulated learning at Wave 3. This also allowed us to examine the possibility that parents’ involvement in children’s learning may shape children’s self-regulated learning and achievement by facilitating the development of multiple forms of motivation among children. Following the analytic approach in the previous set of SEM analyses, the three types of children’s motivation, their self-regulated learning strategies, and their grades assessed 6 months earlier than each construct as specified in the pathway being tested were included to adjust for autoregressive effects. In addition, direct effects (e.g., the effects of each form of children’s motivation on their grades) were included (see dashed lines in Figure 3).

The unconstrained (i.e., parameters were freely estimated) and constrained (i.e., the key parameters were forced to be equal between the two countries) models fit the data adequately,  $\chi^2$ s (*dfs* > 284) > 862, CFIs > .96; TLIs > .94; RMSEAs < .08. The

indirect pathway via children’s parent-oriented motivation remained in both the United States and China, *zs* = 2.23, *ps* < .05, when the effects of their controlled and autonomous motivation were taken into account, with no difference in any of the links between the two countries,  $\Delta\chi^2$ s (*dfs* = 1) < 2, *ns*. Notably, there was also an indirect effect via children’s autonomous motivation and their ensuing self-regulated learning in the United States and China, *zs* = 2.31, *ps* < .05: Parents’ involvement at Wave 1 predicted heightened autonomous motivation at Wave 2 among children, with adjustment for such motivation at Wave 1, *ts* = 4.62, *ps* < .001; children’s autonomous motivation at Wave 2 in turn predicted their heightened self-regulated learning at Wave 3, with adjustment for such self-regulated learning at Wave 2, *ts* = 5.04, *ps* < .001, and ultimately their grades at Wave 4, with their grades at Wave 3 taken into account, *ts* = 2.91, *ps* < .01; these paths did not differ among American and Chinese children,  $\Delta\chi^2$ s (*dfs* = 1) < 2, *ns*.

In the United States, parents’ involvement at Wave 1 was predictive of children’s heightened controlled motivation at Wave 2, with adjustment for such motivation at Wave 1, *t* = 4.23, *ps* < .001; however, this was not the case in China, *t* = 1.30, *ns*,  $\Delta\chi^2$ s > 7.70, *ps* < .01. Once children’s earlier (Wave 2) self-regulated learning was taken into account, children’s general controlled motivation was not predictive of their self-regulated learning at Wave 3 in either the United States or China, *ts* = 1.92, *ns*. Notably, the lack of association between controlled motivation and self-





*Figure 3.* The unique role of children's parent-oriented motivation in the effect of parents' involvement in children's learning on children's achievement. For ease of presentation, within-wave covariances and statistical adjustments of prior levels of all endogenous variables are not shown. Based on the chi-square difference tests, except for the effect of parents' involvement on children's controlled motivation, all paths for the indirect effects were constrained to be equal between the United States and China. American standardized estimates are not in parentheses; Chinese standardized estimates are in parentheses. df = degrees of freedom; TLI = Tucker-Lewis index; CFI = comparative fit index; RMSEA = root-mean-square error of approximation. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

regulated learning was not due to the inclusion of parent-oriented motivation in the model. SEM analyses conducted without parent-oriented motivation also indicated that controlled motivation was not predictive of self-regulated learning strategies beyond children's earlier use of such strategies.

## Discussion

Following American and Chinese children as they entered a new school in seventh grade until the end of eighth grade, the current research revealed that parents' involvement in children's learning was predictive of children's parent-oriented motivation in school over time; such motivation in turn predicted children's subsequent engagement in school, as reflected in their heightened self-regulated learning, which predicted enhanced achievement among children. A key strength of the current research was that children were followed four times over the course of 2 years as they made their way into adolescence, which permitted an optimal context for examining the conceptual model. The SEM employed had stringent controls that provided a window into the direction of effects over time. The current research adds to a handful of studies examining the mechanisms underlying the effects of parents' involvement (e.g., Dearing, McCartney, Weiss, Kreider, & Simp-

kins, 2004; Hill & Craft, 2003). Given the controlled nature of parent-oriented motivation, the pathway identified represents a departure from the motivational mechanisms identified in prior theory and research which have focused on autonomous motivation (e.g., Grolnick et al., 1991; Grolnick & Slowiaczek, 1994).

The substantial positive associations of parent-oriented motivation in school with extrinsic and introjected motivation in school suggest that parent-oriented motivation is largely experienced as controlled motivation by children. Children who are motivated in school to meet parents' expectations hold externally regulated concerns (e.g., avoiding punishment and obtaining rewards from parents) in the academic arena. Regulatory concerns that are introjected—that is, taken in by children, but not fully accepted as their own—also appear to be central in that children who are motivated by parent-oriented reasons are driven by concerns to circumvent guilt and anxiety and cultivate pride and self-worth, likely through parents' approval of their academic endeavors. Parent-oriented motivation was also positively associated with autonomous (i.e., identified and intrinsic) motivation, although to a substantially lesser extent than with controlled motivation. As part of the socialization process, children may internalize parents' goals, such that they view them as personally valuable. This may

be particularly likely when parents support children's autonomy, thereby allowing them to view their pursuit of academic endeavors as reflecting their own choices. Although children's autonomous motivation took the form of viewing academic endeavors as personally valuable (i.e., identified motivation) more than finding such endeavors enjoyable (i.e., intrinsic motivation), it did sometimes take this latter form—perhaps because children's parent-oriented motivation causes children to develop skills that make school pleasurable.

Although children's parent-oriented motivation in school is related to other forms of motivation in school, it is distinct from such forms. The CFAs consistently indicated that children's parent-oriented motivation represents a separate construct from extrinsic, introjected, identified, and intrinsic motivation in that the two-factor models fit better than the more parsimonious one-factor models. Of particular importance, the effect of children's parent-oriented motivation on their engagement in school was not accounted for by either their controlled or autonomous motivation, despite the latter having an effect on children's engagement. The distinctiveness of children's parent-oriented motivation is in line with the idea that such motivation serves a unique function in motivating children, given that the relationships children have with parents are often the most fundamental in their lives. Therefore, parent-oriented motivation may provide children with a particularly meaningful sense of purpose as they feel that they are working to fulfill the goals of central figures in their lives.

Given that children often become less interested in school during early adolescence, such purpose may be particularly important in sustaining their engagement in school during this phase of development (Pomerantz et al., 2012). Of significance is whether parent-oriented motivation confers similar benefits before as well as after the early adolescent years studied here. Because younger children are more intrinsically motivated in school (e.g., Harter, 1981; Lepper, Corpus, & Iyengar, 2005), possessing heightened parent-oriented motivation may not add much to their achievement. Older adolescents may have a more established desire to individuate from parents, which may make it difficult to be motivated in school for parent-oriented reasons; however, children's feelings of obligation to the family during high school appear to foster their engagement, albeit not achievement, in school (e.g., Fuligni, Yip, & Tseng, 2002; Hardway & Fuligni, 2006). It is also possible that children's parent-oriented motivation may have costs in the long term as children may become anxious over the possibility that they may not be able to fulfill parents' expectations, particularly if they have a history of doing poorly in school. Moreover, children may flounder when their parents are no longer there to set goals for them.

Children's parent-oriented motivation was not the only mechanism by which parents' involvement in children's learning enhanced their engagement and ultimately achievement. Parents' involvement was also predictive of children's subsequent autonomous motivation in school, which in turn predicted children's subsequent engagement in school. The relatedness to parents established among children by parents' involvement may lead children to internalize parents' values about school, which may be conveyed via their involvement (Grolnick et al., 1997); such internalization may ultimately build children's skills, leading them to find academic endeavors pleasurable, thereby fostering intrinsic motivation. Moreover, in the context of their involvement, parents

may directly emphasize the enjoyable aspects of learning. For example, in assisting children with homework, parents may point out how fun something is; when discussing what children are learning, they may support children in identifying the aspects they enjoy.

In investigating the mediating role of children's parent-oriented motivation in the effects of parents' involvement on children's achievement, we evaluated whether such motivation plays a similar role in the United States and China, given that parents often become involved in children's learning differently in these two countries (Chao, 1994, 1996; Cheung & Pomerantz, 2011). Despite the differences in the nature of American and Chinese parents' involvement, such involvement foreshadowed children's parent-oriented motivation similarly in both countries, which in turn similarly contributed to children's enhanced engagement and ultimately their grades. This may reflect the significance of pursuing goals for parents who are central figures in children's lives in the United States as well as in China. Indeed, it is possible that children in both countries feel obliged to reciprocate parents' commitment of resources to their learning by doing well in school for them. It is also noteworthy that the associations between children's parent-oriented motivation in school and their controlled and autonomous motivation in school were practically identical in the two countries, indicating similarity in the nature of American and Chinese children's parent-oriented motivation.

There are several limitations of the current research that should be considered in interpreting the findings. First, following much prior research (e.g., d'Ailly, 2003; Grolnick & Slowiaczek, 1994; Hill et al., 2004), we relied on children's reports of parents' involvement in their learning. We did so in part because for parents' involvement to foster parent-oriented motivation among children, children need to be aware of parents' involvement; such awareness is likely to be captured by children's reports. Moreover, children may be less biased than parents in reporting socially undesirable parenting (Gonzales, Cauce, & Mason, 1996), such as a lack of involvement on parents' part. Unfortunately, the overlap among child, parent, and teacher reports of parents' involvement in children's learning is quite weak (e.g., Grolnick & Slowiaczek, 1994; Hill et al., 2004); with no established "gold standard," it is difficult to judge who provides the most accurate report. However, each of the three types of reporters adds unique variance to children's achievement, leading investigators to consider all three as valid (e.g., Reynolds, 1992). What we have labeled parents' involvement in children's learning in the current research might best be thought of as children's perceptions of such involvement. In addition, because children served as reporters for all of the other constructs, except their achievement, under study, it might be argued that the associations that we documented simply reflect a reporter bias on the part of children. We addressed this issue in large part by taking children's earlier status on the constructs into account when predicting them over time. Still, research obtaining additional perspectives—that of parents and teachers—on parents' involvement in children's learning would be fruitful.

Second, although comparable to those of prior research employing a similar analytic framework with stringent statistical controls to identify indirect pathways over time (e.g., Davies, Woitach, Winter, & Cummings, 2008; National Institute of Child Health & Human Development [NICHD] Early Child Care Research Network, 2003), the effects identified in the current research were

modest. Even modest effects, however, can be meaningful as they may accumulate over time to substantially shape children's achievement (Pomerantz et al., 2011). It is likely that the effect of parents' involvement on children's achievement is moderated by a variety of forces. Indeed, research indicates that the effect depends on parents' educational attainment, with the strongest effects evident among children with parents with low educational attainment (e.g., Dearing, Kreider, Simpkins, & Weiss, 2006). The quality of parents' involvement may also shape its effect (for a review, see Pomerantz, Grolnick, & Price, 2005): Parents' involvement may be more effective if it is autonomy supportive; this type of involvement may lead children to view the parent-oriented motivation ensuing from parents' involvement as personally important; when parents involvement is controlling, the parent-oriented motivation that may be cultivated may be driven by children's concern with avoiding punishment or attaining rewards. The form of parents' involvement may play a role as well. For example, parents assisting children with their homework (vs. other forms of involvement such as attending parent-teacher conferences) may be fraught with more negative affect on parents' part (e.g., Pomerantz, Wang, & Ng, 2005); this may cause such involvement to have weaker effects than other forms of involvement. In addition, the small effect size may be attributable to the fact that multiple mechanisms may underlie the effect of parents' involvement. The current research identified two motivational pathways (i.e., parent-oriented motivation and autonomous motivation) that contribute to children's achievement via their engagement, but parents' involvement also contributes to children's achievement by developing their skills (e.g., Sénéchal & LeFevre, 2002).

Third, the samples used in the current research do not represent the diversity of the United States and China. Thus, questions remain concerning variations within each country in the process by which parents' involvement in children's learning contributes to children's engagement in school. Indeed, in the United States, cultural heritage plays a role in how parents become involved in children's learning (e.g., Hill & Craft, 2003; Lareau, 1987), with some evidence that it shapes the effects of parents' involvement (e.g., Hill et al., 2004; Hill & Craft, 2003). Thus, within the United States, there may be important variations in the pathway we identified that we were unable to examine, given that our American sample was mainly of European descent. There may be differences due to cultural heritage within China as well. Differences between rural and urban China may influence the way parents become involved in children's learning (Ho, 1989), which could have implications for the pathway we identified.

Using a longitudinal design with children entering adolescence in the United States and China, the current research provides the first empirical evidence indicating that one mechanism through which parents' involvement in children's learning enhances children's achievement is by heightening their parent-oriented reasons for doing well in school, which fosters children's engagement and thereby their achievement. Given that parent-oriented motivation in school was more strongly associated with children's controlled than autonomous motivation in school, this finding represents a departure from the motivational processes that have been posited, and often empirically supported, to underlie the effects of parents' involvement. It appears that parents' involvement shapes children's achievement by promoting not only autonomous reasons for learning among children but also parent-oriented reasons that are

of import in maintaining children's engagement in school and achievement during the early adolescent years—a time when children often lack interest in school.

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