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The Hopes Carry Them On: Early Educational Expectations and Later Educational Outcomes in Rural Gansu, China

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Running Title: Early Expectations and Educational Outcomes

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Abstract

It is commonly held in the education literature that parents' and children's educational expectations are important factors in predicting children's educational achievement and attainment. However, very little is known about the significance of parents' and children's early expectations in developing country settings. This study employs a case study of children in 100 rural villages in a poor province in Northwest China to explore the impact of parents' and children's early expectations on children's later school persistence and completion of compulsory and secondary education. I pay special attention to the agreement and disagreement in early educational expectations between parents and children. Results from analyses of longitudinal data from the Gansu Survey of Children and Families (GSCF) from 2000 to 2009 reveal two main results. First, parents' and children's early expectations are strong predictors of children's chances of staying in school, completing compulsory education and completing secondary education. Second, there are substantial discrepancies in expectations between parents and children in many families, but children whose high expectations aligned with their parents' fared best in later educational outcomes. This positive impact held even for children from the most impoverished families. Results also show that parents' expectations are tied to the local village cultural environment.

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Introduction

The impact of family socioeconomic status (SES) and family environment on children's educational outcomes are major topics in educational stratification research in both developed and developing countries. A key element of family environment is early educational expectations. It is commonly held in the education literature that parents' and children's expectations are important factors in predicting children's educational achievement and attainment. A large number of studies in developed countries have established such a pattern (Teachman 1987; Teachman and Paasch 1998; Kao 2002; Marjoribanks 2002; Trusty, Plata, and Salazar 2003; Englund et al. 2004; Davis-Kean 2005; Jacobs, Chhin, and Bleeeker 2006; Neuenschwander et al. 2007), and a few studies show the same association in developing country settings (Zhang, Kao and Hannum 2007; Beutel and Anderson 2008; Hannum, Kong and Zhang 2009; Kong 2010). However, among the large number of studies of parents' and children's educational expectations, only a few explore the influence of parent-child agreement and disagreement in expectations on children's schooling (Furstenberg 1971; Smith 1981, 1982, 1991; Hao and Bonstead-Bruns 1998; Kim and Schneider 2005; Beutel and Anderson 2008). To date, there are almost no studies that examine longitudinally the reciprocal influence between parents and children in their educational expectations, and the associations of early expectations and children's later educational outcomes.

This study uses data from Gansu, an inland province in northwest China with a relatively high rate of illiteracy, prevalent poverty, and a low level of economic growth. The Chinese government has made major policy changes in the past few years that aimed at addressing the access problems of children living in impoverished rural areas to insure free compulsory education (Ministry of Education 2006). However, rural children are still facing substantial barriers in advancing their schooling as entering of senior high school is highly competitive (Lin and Zhang 2006) and schooling beyond compulsory education is associated with direct and indirect costs that could be too heavy for many rural families. At the same time, it is a strong belief shared by both parents and children in rural Gansu that education is one of the most important ways to help children to "walk out" of the villages and change their future, as economic development has provided more opportunities (Kong 2010). Rural Gansu provides a useful context within which to study the role of early educational expectations in supporting educational attainment in a rural impoverished setting.

With analyses of longitudinal data from the Gansu Survey of Children and Families (GSCF), this paper addresses the following major questions: To what degree do parents and children agree or disagree in their goals for children's future schooling? Are early expectations associated with rural children's later educational outcomes? Does agreement of parents and children in high expectations matter? Do early high expectations moderate the negative impact of poverty? This paper also explores contextual factors that may shape the formation of expectations.

Previous Research

Parents' and Children's Educational Expectations

Much research in the field of educational stratification has indicated that families provide different forms of resources to facilitate children's education, and that conventional measures of family socioeconomic status, such as parents' education and family income, alone cannot account for all of the variations in home environment that lead to differences in children's educational

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outcomes (Sewell and Shah 1968; Sewell, Haller, and Ohlendorf 1970; Woefel and Haller 1971; Coleman 1988; Teachman 1987; Teachman and Paasch 1998). One element of family environment that matters for children's educational attainment is parents' educational expectations (Teachman 1987; Teachman and Paasch 1998; Trusty 1998; Buchmann and Dalton 2002; Cheng and Starks 2002; Eccles and Wigfield 2002; Wood, Kaplan, and McLoyd 2007). High parental expectations and the duration of these expectations are strong predictors of children's school achievement and school persistence (Jacobs and Harvey 2005), and appear to have long-term influences on children's adult life outcomes (Jacobs, Chhin, and Bleeker 2006; Flouri and Hawkes 2008).

The theoretical frameworks of status attainment and family social capital are often invoked to explain this effect. From the perspective of status attainment, parental educational expectations are one of the important mechanisms by which parental SES is transmitted to the next generation. Parents' expectations about their children's educational attainment reflect parental attitudes about education and their investment in their children. By conveying their expectations to their children and by providing support and encouragement, parents can influence children's own attitudes about education and their behavior at school (Woefel and Haller 1971; Kerckhoff 1989; Wilson and Wilson 1992; Trusty, Plata, and Salazar 2003).

The family social capital framework focuses in a different manner on the connection between parents and children. In this framework, parents' educational expectations are conceptualized as a form of social capital (Hao and Bonstead-Bruns 1998; Teachman and Paasch 1998; Qian and Blair 1999; Sandefur, Meier, and Campbell 2006; Flouri and Hawkes 2008). Using National Educational Longitudinal Study (NELS) data, Sandefur and Campbell (2006) found that family social capital, as measured by parents' expectations and the frequency of parent-child interaction, substantially increase the probability of students' college attendance. The authors concluded that as parents may have more control over this form of capital than over family economic status, further research in this area would contribute to our understanding of stratification in education. Social capital at the community level may also matter for creating and sustaining high expectations among parents and children. In examining the gaps in educational attainment of children from different ethnic groups in immigrant families, Hao and Bonstead-Bruns (1998) conceptualize ethnic culture and solidarity as community social capital. Community social capital defined in this way appears to help the formation and maintenance of parents' and children's high expectations, which in turn may have strong positive impacts on children's school achievement.

Parental influences are important to children's education not only because of the psychological and emotional support that parents provide in family socialization processes, but also because of parents' control of the financial and material resources in the home. Parents' expectations may lead to differences in family investments that moderate the influence of family SES on children's expectations and attainment (Kao and Tienda 1998; Qian and Blair 1999; Kao 2002). In investigating racial differences in educational expectations in the United States, Kao (2002) found that Asian American parents have higher expectations for their children and invest more financial and material resources in their children's schooling than other parents in the same economic category, which contribute to higher achievement among Asian American students. Similarly, Teachman (1987) has suggested that parents can mobilize material and nonmaterial resources to create a home environment that facilitates motivation and higher attainment. Parents from socially disadvantaged groups can compensate for a lack of financial and human capital by demonstrating more optimistic expectations for their children, which can serve to increase

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children's own expectations, and eventual school attainment (Kao 2002; Beutel and Anderson 2008; Qian and Blair 1999; Davis-Kean 2005).

Many studies have found that children's educational expectations are associated with both their behavioral choices that facilitate academic success and educational attainment (Wilson and Wilson 1992; Hao and Bonstead-Bruns 1998; Kao and Tienda 1998; Buchmann and Dalton 2002). The positive impact of children's educational expectations on their attainment holds even when controlling for previous achievement (Trusty, Plata, and Salazar 2003).

Parents' educational expectations serve as a major influence on children's expectations (Jodl et al. 2001; Cheng and Starks 2002; Eccles and Wigfield 2002; Davis-Kean 2005; Neuenschwander et al. 2007; Wood, Kaplan, and McLoyd 2007). Cheng and Starks (2002) used NELS data to examine racial differences in the effects of significant others on students' expectations. Their results revealed the strong influence of parents on students' own expectations, with the effect differing by racial group. However, the situation might be different in the settings of developing countries. Beutel and Anderson (2008) found little evidence of a reciprocal relationship between parents' and children's educational expectations in South Africa.

Other factors that may be related both to parents' and children's expectations include family economic status, parents' education, children's gender, race, and children's previous achievement. Besides family-related factors, some studies have shown that school characteristics and the expectations of teachers and school counselors all have some influence on children's expectations (Cheng and Starks 2002; Qian and Blair 1995) and parents' perceptions of school quality and environment are closely related to parents' expectations (Spera, Wentzel and Matto 2009). In his study of Australian adolescents, Marjoribanks (2002) revealed that students' achievement and self-concept influence the relationship between family background and children's own expectations. However, relatively few studies in developing countries have examined school-related factors, such as how children's perceptions of school experiences might shape their formation of educational expectations.

Agreement and Disagreement between Parents' and Children's Expectations

One line of research on educational expectations has focused on parent-child discrepancies in educational expectations, factors that may predict discrepancies, and the consequences of alignment or discrepancy in expectations (Furstenberg 1971; Smith 1981, 1982, 1991; Kim and Schneider 2005; Hao and Bonstead-Bruns 1998; Beutel and Anderson 2008). Smith's (1982, 1991) studies compared children's expectations, children's perception of parents' expectations, and parents' actual expectations. Smith (1982; 1991) found that children's expectations were strongly associated with their understanding of their parental expectations and that agreement between children's and parents' expectations was positively associated with children's school grades. However, Smith's studies focused only on the agreement between parents and children, without considering the levels of expectations at which parent and child agree upon.

Several other studies have also pointed to the positive influence of parent-child agreement in expectations on children's schooling. Analyzing NELS-88 data, Hao and Bonstead-Bruns (1998) showed that when parents and children agreed at a higher level of expectations, the agreement was closely associated with children's higher achievement, while greater differences suppressed achievement. Kao (2002) found that children were more likely to maintain their educational expectations over time if parents and children share the same expectations. Analyzing NELS data from 1988 to 2000, Trusty and Niles (2004) also found that

students with high expectations were more likely to fulfill their goals if their parents also held high expectations for them.

The China Context

China has experienced rapid expansion of education in the past few decades and has achieved almost universal enrollment at basic educational levels (Hannum at al. 2008). As economic development has brought many employment opportunities and rapidly increasing returns to schooling, education has become one of the most important factors for upward mobility for rural residents (Zhang and Zhao 2006; Hannum and Adams 2007, 2008; Kong 2010). However, rural children and families have long faced barriers to education in the form of household and community poverty (Brown and Park 2002; Zheng, Niu, and Xing 2002; Hannum 2003; Adams and Hannum 2005; Connelly and Zheng 2007). Empirical studies have found a rising risk of dropping out of school starting at the junior high school level, and more obvious at secondary school level, as both direct and indirect costs of schooling rise (Brown and Park 2002; Hannum and Adams 2007, 2008).

To address the access problems of rural children, the Chinese government has made a series of efforts and policy changes to provide rural students with free compulsory education and to improve the quality of education (Ministry of Education 2006). These efforts including intensive investment for the development of rural education, systems to eliminate any tuitions and fees for compulsory education, and schemes to provide free textbooks and subsidies for rural students who are in need in completing their compulsory education (Postiglione 2007). The Long Term Plan for Educational Reform and Development (The Central Government 2010) expresses continued commitment to preventing the drop out of rural students because of financial difficulties and poor performance. All of these efforts have reduced the economic barriers for compulsory education. Still, rural children struggle with lack of resources and inadequate school quality, especially when they reach levels beyond compulsory education (Hannum and Adams 2007; 2008).

In addition to economic constraints, children's performance and engagement in school and traditional gender norms have direct or indirect impacts on children's school persistence (Zheng, Niu, and Xing 2002; Zhang, Kao and Hannum 2007; Hannum, Kong and Zhang 2009, Kong 2010). Parents and children view poor school performance, unwillingness to attend school, and the costs of school attendance as major barriers to education in rural communities (Hannum and Adams 2007).

Also in rural China, Hannum and Adams (2008) found that mothers' and teachers' high expectations were positively correlated with children's subsequent school persistence. Zhang's (2011) study revealed that teachers who perceive home environment as the key influence on children's school success have lower educational expectations for children, which in turn predicts children's later enrollment. These results highlight the importance of early support by significant others for children's educational persistence.

Qualitative studies also highlight the importance of parental support in shaping children's educational attitudes and outcomes. Kong's (2010) ethnographic study of rural parents' involvement in their children's schooling in rural Northwest China showed that parents, though limited in education themselves, were making great sacrifices in order to provide their children with the resources needed for their education, hoping that better education would bring their children a better future. Parents' high hopes and their sacrifices often translated into motivations for children to strive for better achievement at school. Other qualitative studies have suggested

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that parents' view of the value of education influences some children's, especially girls', decisions to drop out of school (Xiao 2001) and that parents' high expectations positively influence children's school persistence, even when children do not wish to continue (Liu 2004).[1]

This paper focuses on parents' and children's educational expectations, which is defined as expected level of school to complete. Building on previous research and considering the gaps in existing literature, this study tests the following hypotheses:

1. There are discrepancies in educational expectations between parents and children.

These discrepancies could emerge in a variety of ways. Parents may have expectations that are lower than their children, since parents are more aware of economic constraints than children themselves. On the other hand, parents who consider education as the only way to improve their children's future live, may hold higher expectations even in cases when the children do not have such high hopes.

2. Parents' and children's early expectations are positively related to children's later educational outcomes.

As indicated by studies cited above, early high expectations may facilitate greater efforts among children and better support from parents, which in turn may lead to better educational outcomes.

3. When there are high expectations that are consistent between parents and children early in children's lives, children have the best outcomes in their later educational attainment.
    a. The positive influence of shared high expectation helps to moderate the negative impact of poverty on children's schooling.

For children to finish compulsory education, and especially to continue beyond compulsory education, requires both a commitment from the parents to shoulder the sometimes very heavy burden of providing economic resources, and a commitment from children to make the intense efforts in their studies. Agreement about expectations, and the combined determination and efforts of both parents and children, may help to overcome the barriers of resource deprivation.

4. The village and school environment matter for parents' and children's expectations.

In relatively closely-knit villages such as those in rural China, community shared values regarding education would likely shape the formation of expectations among parents. For children, how they perceive their experience at school would be closely related to whether they determine to continue schooling.

Data and Methods

Data

The GSCF is a representative sample of 2,000 children ages 9-12 in the year 2000, resident in 100 villages in rural Gansu. The sampling strategy involved a multi-stage, stratified

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[1] Another line of study on educational expectations in rural China has focused on gender. Mothers' opinions about gender differences in children's ability and views about old age support are closely tied with their educational expectations for their children. Among mothers who hold egalitarian gender attitudes, there are fewer gender differences in expectations for children, and mothers' higher expectations are associated with children's school persistence (Zhang, Kao and Hannum 2007).

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cluster design with random selection procedures at each stage. In each selected village, children were sampled from the list of all 9-12 year-olds. The first wave of data was collected in the year 2000. The children were revisited in 2004, in wave 2. Both waves also include linkable secondary samples of the sample children's mothers, teachers, school administrators, and village leaders. In 2007, only the families of sample children were revisited. Then in 2009, the original sample children, now youth, were revisited one more time. This time, details about their educational histories, migration and employment history and status were collected. Most of the variables used in this study were taken from wave 1 and wave 2 questionnaires answered by children and mothers.

Children's academic achievement was reported by their homeroom teachers at each wave. Children's educational outcome measures were obtained from later surveys: children's enrollment in 2007 was obtained from the 2007 family questionnaire; enrollment in 2009, and completion of compulsory and secondary education were obtained from the 2009 youth questionnaire.

In the year 2000, when the first wave of data was collected, most sample children were at school, with only 1.4% of them not enrolled. Four years later, among children who were at school in year 2000 and remained in the survey, almost 13% dropped out of school. Since children's previous school achievement is included in the models, the SEM and 2007 enrollment analysis is limited to children who stayed in school in 2004 and have information about their schooling status in 2007, which results in 1594 children. [2] As SEM can handle missing data, all 1594 cases are used in the analysis. For the analysis of 2009 enrollment and the completion of compulsory and secondary schooling, the sample is further limited to those who are in the SEM sample and have participated in the 2009 survey, which results in 1518 cases.

Measures

Educational Outcomes

All children in the sample are in an age group that, under normal conditions, should have at least finished secondary education by 2009. However, considering the fact that some rural children may start school late, and some may have repeated grades, I use several different measures of children's educational outcomes. Children's *Enrollment in 2007* and *Enrollment in 2009* indicate whether the child was enrolled in school at each time point. For both measures, they were coded as 1 if the child was in school and as 0 if not. *Completion of Compulsory Education* indicates if the child had completed junior high school, which equals the completion of compulsory education, and *Completion of Secondary Education* indicates if the child had completed general senior high school, technical high school or vocational high school education (1=yes, 0=no). All of these school enrollments require the completion of junior high school.

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[2] There are 80 families dropped out of the survey at wave 2, and another 70 were lost at 2007. Further examination of children who dropped out at wave 2shows that these children on average have lower expectations themselves, their parents have lower expectations, but no difference in family wealth, as compared to children who remained in school. This indicates that by limiting the analytical sample to those who remained enrolled in wave 2, my estimation of expectation effects might be downward biased.

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<u>Educational Expectations</u>

Parents' Educational Expectations are derived from mothers' answers to the question with the same wording for both wave 1 and wave 2: "What is the highest level of school you think your child can attain?" The possible responses include four categories: finish primary school, finish junior high school, finish senior high school, and attain college or above. I use mothers' expectation as a proxy for parents' expectation, which is based on the consideration that mothers are more often than fathers to be the one who takes care and disciplines the child on daily basis. Thus, a mother is likely to have much influence on her child's schooling through intense daily interactions. Also, fathers are more likely to migrate away. .[3]

I also create a measure called *Community Shared Education Values.* This variable is the mean expectation of other mothers in the village (excluding the index mother) for both wave 1 and wave 2. This measure helps to capture the community's shared values on education that might influence parents' expectations.

Children's Educational Expectations is a measure that consists of children's responses to the question "What is the highest level of school you think you can attain?" Children's answers include 6 categories, from finishing primary school, finishing junior high school, finishing senior high school, finishing technical high school, finishing two year college, finishing college or above.

For multivariate analyses, I recoded mothers' and children's responses to the number of years associated with completion of each level of schooling, in order to generate a continuous measure. Those cases in which mother or children answered "other" were coded as missing. For descriptive purposes, I also create 4 indicators that measure the parent-child agreement in college-level expectations: *Shared Low Expectation:* both parents and child hold lower than college expectations; *Parents Low Expectation*: child holds college expectation but parent's expectation is lower than college; *Child Low Expectation*: parents hold college expectations, but child's expectation is lower than college; and *Shared College Expectation:* both parents and child holding college expectation. The construction of these indicators reflects the consideration that the level of expectation at which parents and child agree upon matter for children's school persistence. Since about 76 percent of the children reported college expectation at wave 2, to examine parent-child discrepancy at other levels results in too few cases for some categories.

<u>Child Characteristics</u>

Child's individual characteristics include *Gender* (with girls coded as 1 and boys coded as 0) and *Age.* Children's *Math Grade* was used as a measure of their academic achievement. The grades were end-of-semester exam scores reported by children's homeroom teachers at both wave 1 and wave 2. They are on a 100 scale, with below 60 considered as failing the class.[4]

To capture the influence of children's school experience on their expectations, two measures are used. Children's *Disengagement* is children's rating of the statement "Very often I do not want to go to school," with four choices from completely disagree to completely agree.

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[3] There was no information on father's expectation at wave 1. At wave 2, fathers also answer the question with the same wording as mothers. Since fathers are more likely to be away from home, there are more missing cases than mothers. About 40% of the fathers share the same expectations as mothers, with about 16% of fathers holding expectations lower than mothers, and the rest holding expectations higher than mothers.
[4] There is also information on children's Chinese grades. In multivariate analysis, all models that involve children's school achievement were tested with both Chinese and math grades included, but the Chinese grades were never significant, and adding in Chinese grades does not change other coefficients.

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The measure is recoded into a dichotomous variable, with any statement of agreement coded as 1, and any statement of disagreement coded as 0. The other measure, *Self Evaluation*, is children's answer to the question "Did you make efforts in your school work for better achievement last semester?" Possible answers were seldom, sometime, and always. With few cases in the "seldom" category, the measure is recoded into a dichotomous variables with "always" coded as 1, others as 0. Both wave 1 and wave 2 included these questions with the same wording, and they are recoded in the same manner.

<u>Family Characteristics</u>

As measures of family background, I used *Parents' Total Education*, which is the total number of years of schooling finished by mother and father; and *Family Wealth,* which was created by adding the value of all durable goods and equipments owned by the family. The information was obtained from the household questionnaire, which was usually answered by the father. In logistic regression analysis, a family wealth quintile specification was used to capture a potential nonlinear effect. Considering that many families have to borrow money for their children's schooling, I also included in the analysis mother's assessment of *Family Credit Limit*, in order to fully capture the influence of family economic situation on children's schooling. At both waves, mothers answered the question" How many people do you think are willing to lend you money when you are in need?" by choosing from "only a few, some, and many people." The *Total Number of Children* in the family is also included in the analysis. Descriptive statistics for child and family background measures used in the analysis are presented in the Appendix.

Analytical Approach

One of the concerns in expectations research is that expectations might be influenced by factors that also have impact on educational outcomes, such as family SES and children's characteristics. Also, a mutual influence between parents' and children's expectations may exist. Considering the endogenous nature of expectations, I conduct the multivariate analysis in two steps: first I use structural equation modeling (SEM) to estimate the influence of family background and children's characteristics on parents' and children's educational expectations, allowing reciprocal influences between the two at each time point, and a cross-lagged effect over time. Then, predicted parents' and children's expectations at wave 2 from SEM estimation are used to examine impact on children's later educational outcomes.

The longitudinal data allows me to use a cross-lagged and autoregressive approach within the framework of structure equation modeling. The SEM also allows me to specify a non-recursive model, by including reciprocal influences between parents' and children's expectations. By including parents' and children's expectations at both wave 1 and wave 2, I am able to assess the influence of children's earlier and later expectations, as well as changes in their expectations over time on parents' expectations; and the influence of parents' on children's expectations in the same manner. The maximum likelihood with missing values method is used to address the issue of missing data (Statacorp 2011). To estimate the influence of educational expectations and parent-child differences in expectations on children's later educational outcomes, I use a set of logistic regression models, with the outcomes including children's enrollment in 2007, enrollment in 2009, completion of junior high school and completion of secondary education. In this part of the analysis, I use the predicted parents' and children's expectations at wave 2 from SEM estimations, rather than their actual values.

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Using the predicted values properly handles the endogeneity of these two measures in the educational outcome equations. Since all the measures of educational outcomes are measured at times later than wave 2, the estimates reflect the lagged impact of early expectations on later educational outcomes.

Results

Descriptive Analysis

Table 1 presents the descriptive statistics of educational outcome measures. In the analytical sample, 67 percent of the children were still enrolled in schools in 2007, three years after wave 2. By the year 2009, about half of the children, now youth, were no longer in school. It could be that some of them have completed secondary education and started working. Looking at completion rates at different levels, we see that by 2009 in the analytical sample, the majority, about 86 percent, have completed junior high school, which is the completion of compulsory education. Among children who have completed compulsory education, about 36 percent have transitioned to and completed secondary education (31 percent among the whole sample).

(Table 1 about here)

Table 2 presents descriptive and correlation statistics of parents' and children's educational expectations and their school achievement at wave 1 and 2. Overall, both parents and children expressed very high expectations, and raised their expectations over time. In year 2000, about 60% of children wanted to go to college, and the percentage rose to 76% four years later. Parents' expectations were lower than children's in general but showed the same increase over time. By 2004, among parents whose children were still in school, about 44% of them expected their children to go to college, as compared to 27% in 2000 (calculation not shown). One possible explanation of this trend is that parents and children gain more confidence in their children's chance of continuing school as many children have made the transition to junior high school. However, the correlations between parents' and children's expectations are low at both time points, indicating a great deal of parent-child discrepancy. The low correlations of expectations over time among parents and children themselves also reveal much change over time. These low correlations call for attention to discrepancy in parents' and children's educational expectations when examining the impact of expectations on children's school persistence. Table 2 also reveals that children's and parents' expectations are not so closely related to children's achievement when no other factors considered. The relatively low correlation of children's math grades between the two waves also indicates changes in children's achievement as they advanced to higher level at different schools and worked with different teachers.

(Table 2 about here)

Considering the very high expectations of children, it is not surprising that many parents held expectations lower than their children's. However, that is not always the case. At both waves, there are parents who have expectations higher than their children's. Figure 1 shows the agreement and disagreement between parents and children in their college expectation. At both waves, there are about 40 percent of the children who hold college expectations, but their parents do not share the same high expectations. At the same time, in both waves, there are about 8 % of children who do not have college expectations, but their parents cherish such high hopes. One finding that stands out is that the percentage of both parents and child holding lower than college expectation drops almost by half over time, from 31% in wave 1 to 15% in wave 2. Meanwhile,

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the percentage of both parent and child holding college expectations increases from 19% in wave 1 to almost 36% in wave 2. [5]

<center>(Figure 1 about here)</center>

The foregoing descriptive analysis supports the hypothesis that there is a great deal of discrepancy in educational expectations between parents and children, and both parents and children change their expectations over time. How do parents and children influence each other in their expectations? As both parents and children raised their expectations over time, would their high expectations, and the sharing of college expectations, support children's actual later education outcomes? The following multivariate analyses address these questions.

Multivariate Analysis

SEM estimation of Parents' and Children's Expectations

The SEM estimation results suggest whether and in what manner parents and children influence each other in their expectations cross-sectionally and over time, as well as how family and child characteristics, and community contexts may influence the formation of expectations.

Endogenous Variables: the endogenous variables for the SEM analysis are parents' and children's educational expectations at wave 1 and wave 2. Besides the exogenous variables that I will explain below, I allow autogressive and cross-lagged paths over time, as well as reciprocal relations between parents' and children's expectations at each time point.

Exogenous variables: I include family background (parents' total education, family wealth, number of children in family) and children's school achievement at each wave in the equations for parents' and children's expectations of the same wave. For children's expectation equations, I also include measures of children's school experience of the same wave: disengagement from school, and self-evaluation of making efforts in school work. These measure help to test whether children's school experience may influence how children form and change their expectations. For parents' expectation equations, I also include mother reported family credit limit in addition to measures of family wealth. Considering that village environment may also influence parents' expectation, I also include community shared education values in parents' expectation equations. All models also control for child gender and age, and use robust standard errors to correct for household clustering.

The model so specified yields a good overall model fit, with CFI=.978, TLI=.948, and RMSEA=.021.[6] Since it is a non-recursive model, which allows reciprocal paths between endogenous variables, I also test the stability of the model. The test results indicate that the model meets the stability condition. To focus on the relationships between parents' and children's expectations, I first present the standardized coefficients between expectations in Figure 2. The

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[5] In both wave 1 and wave 2, mothers also expressed their educational aspiration for their children by answering "What is the highest level of school you wish your child could attain?" Here mothers expressed extremely high wishes, with about 67% and 84% of them at each wave wished their children could go to college. The expectation measure used in the analysis reflects more of parents' realistic plans for their children's education.

[6] The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) are incremental measures of model fit, which are analogous to R-squared, with a value of one indicating having the best possible model. The Root Mean Square Error of Approximation (RMSEA) is an absolute measure of fit. Some researchers suggested using 0.01, 0.05, and 0.08 to indicate excellent, good and mediocre fit respectively, others suggest using 0.10 as cutting point for poor fitting models (Kenny 2011).

solid lines indicate significant path coefficients, while the dotted lines indicate that coefficients are not significant at 0.05 level.

(Figure 2 about here)

Figure 2 shows that, controlling for other measures of family and community factors, parents who reported higher expectations at wave 1 tend to have higher expectations at wave 2, though the association is rather weak. We see the same, but again very weak, association between children's expectations across time. This further confirms the descriptive finding, that there are substantial changes in parents' and children's expectations over time. At wave 1, children's expectations are negatively associated with parents' expectations, which probably reflects the fact that children at that time point had expectations much higher than their parents. However, at the same time, children tend to have higher expectations if their parents' expectations are high. When examining over time, there are no lagged effects of parents' expectation on children's later expectations, nor children's on parents'. Moreover, at wave 2, adjusting the autoregressive and cross-lagged associations, there is no significant reciprocal association between parents' and children's expectations, which is consistent with the very low correlations presented in the descriptive analysis. These results indicate that other factors influence how parents and children form and change their expectations over time. Table 3 presents the standardized coefficients from SEM estimation (except the expectation associations that are already reported in Figure 2).

(Table 3 about here)

Consistent with previous research, parents and children have higher expectations for children who are better achievers, controlling for other factors. Children's perceived school experiences are closely associated with their expectations. Children who considered themselves to be making efforts at school work tend to have higher expectations, especially at wave 1. Their feelings of disengagement have strong negative associations with their expectations, especially at wave 2. For parents, community shared education values are closely associated with parents' expectations. Parents tend to have higher expectations when other parents in the village have high expectations in general.

The SEM analysis reveals that family economic situation has no significant impact on children's educational expectations at both waves. It seems that children are not concerned with whether their families have the resources to support their future plans when forming their expectations. Family wealth has positive influence on parents' expectations at wave 1, but this impact becomes only significant at 0.1 level at wave 2. Parents are more concerned with family credit limit. Compared to those parents who think they have very limited credit limit, parents tend to have higher expectations if they believe that there are people they can borrow money from when needed., net of their actual economic situation. It is true that better-off families often have better credit limit, still, there are parents from different economic situations who believe they have very few people from whom they could borrow. Considering that many families have to borrow money to help their children's schooling, this measure captures more the influence of family economic situation on parents' expectations than conventional measure of family wealth alone.

Better-educated parents have higher expectations, and their children also carry higher expectations, which is consistent with many previous studies. Number of children in the family has almost no impact on parents' and children's educational expectations. There is no gender difference in children's expectations at both waves. Though there is significant gender difference in parents' expectations at wave 1, the magnitude of the differences is rather small, and this

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difference becomes even weaker at wave 2 and is only significant at 0.1 level, when controlling for other factors.

Two findings from the SEM analysis are worth noting: the strong association between community shared education values and parents' educational expectations, and the close ties between children's perceived school experience and their expectations, in addition to conventional measures of children's school achievement and family background. These findings highlight the importance of community contexts as hypothesized.

How might parents' and children's early expectations together influence children's later educational outcomes? The following analysis will test the hypotheses that early high expectations have positive impact on children's later educational outcomes, and that children who share with their parents high expectations fair the best in their later educational outcomes.

Logistic Regression of Education Outcomes

To explore the impact of early expectations on several measures of children's later educational outcomes, I use predicted parents' and children's expectations in wave 2 obtained from above SEM estimation in the logistic regression of educational outcomes. The predicted expectations obtained from SEM have already taken into account the possible influence from family and child characteristics, thus can get more accurate estimates of how early expectations may impact later educational outcomes. I include both parents' and children's predicted expectations in the models, instead of creating the difference score between parents and children. This choice is based on the consideration that difference scores take into account the direction and distance of parent-child difference, but cannot bring out the different effects when parents and children agree with each other at different levels of their expectations.[7] Table 4 presents the estimated odds ratios of educational outcomes, All models use village random effects. The analysis of enrollment in 2009 is limited to those who were still enrolled in 2007, and the analysis of completion of secondary education is limited to those who have completed compulsory education.

(Table 4 about here)

Parents' early expectations have strong positive impacts on children's later school outcomes, though with relatively smaller magnitude compared to children's own expectations. Among children with same expectations, those whose parents carry higher expectations have a better chance to stay in school in 2007 and 2009, and to complete their compulsory education. However, among children who have completed compulsory education, parents' expectations have no significant impact on their completion of secondary education, controlling for children's own expectations and other factors. This finding may reflect the fact that parents' expectations help to keep the children in school, but to complete secondary education requires concentrated efforts from the children as school work becomes very intense. Thus, children's own commitment plays a more important role in predicting the completion of secondary schooling.

There is at the same time a strong positive impact of children's early expectations. Holding constant parents' expectations and other factors, one year higher in children's predicted expectations increases children's odds of staying in school in 2007 by almost 100 percent. As

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[7] I also run the same set of models using predicted parents' expectation, and predicted parent-child difference (by subtracting predicted children's expectations from predicted parents' expectations). The results tell the same story. They show that parents' expectations have strong positive effect on children's later educational outcomes, and the effect becomes stronger later as children advanced to higher level of schooling. Meanwhile parent-child difference has strong negative effects.

children grow older and advance to higher levels of schooling, the strong impact of early expectations remains. Among children who were at school in 2007, one year higher of children's expectations increases children's odds of staying in school in 2009 by about 45 percent.

Looking at completion rates, children's higher expectations are strong predictors of finishing compulsory education and the completion of secondary education among those who finished compulsory education. One year higher in children's expectations leads to 70 percent and 75 percent increase in their odds of completing compulsory and secondary education respectively.

Taking into account parents and children's expectations, family economic situation still has impact on children's educational outcomes. And this impact is more obvious when it comes to the completion of secondary education. Children from better off families, those in the 3rd and 4th quintile of family wealth, are 70 percent more likely than children from impoverished families to complete their secondary education. Again, this result reflects the fact that post-compulsory education is associated with costs that maybe too heavy for many rural families. It is interesting to see that the best economic situation at home alone cannot lead to the best chances to complete their compulsory and secondary education as compared to those from families in the bottom quintile of family wealth. Parents' education has a positive impact on children's educational outcomes, though the magnitude is rather small. The total number of children in the family has no impact on children's educational outcomes. There are no gender differences in educational outcomes, net of parents' and children's expectations and other family background measures. This result may reflects prior selection: once girls successfully continued their schooling and advanced to higher levels, they enjoy the same chance of continuing schooling and completing compulsory and secondary education as boys. Children's previous school achievement has some mixed and weak impact on children's later educational outcomes. This may be due to the fact that even from wave 1 to wave 2, we observe changes in children's grades, as indicated in the descriptive analysis.

As hypothesized, the above analysis reveals that both parents' and children's early expectations are strong predictors of children's later educational outcomes, while lack of economic resources still presents barriers, especially for children's completion of secondary education. Do children benefit more from sharing the high expectation with their parents? Would the shared high hope moderate the negative impact of poverty?

(Figure 3 about here)

Figure 3 presents the plots of predicted probability of children completing compulsory education (Part A) and secondary education (Part B) with 95 percent confidence intervals from logistic estimation presented in Table 5. The probabilities are calculated at different values of family wealth quintile while holding other variables at mean values. We see clearly that, in general, as family economic situation improves children enjoy better chances of finishing compulsory and secondary education. However, there also exist wide variations among children from the same family wealth category. Considering the strong influence of early expectations, do children benefit more from sharing the high expectation with their parents? Would the shared high hope moderate the negative impact of poverty?

Next, I present predicted probability by grouping children according to the different situation of parent-child agreement in college expectation in Figure 4. We see obviously that within each family wealth quintile, children enjoy the best chance of completing compulsory education when there is parent-child agreement in college expectation, as compared with other children. Among children from the most impoverished families, the probability of completing

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compulsory education is about 18 percent higher for those children who share with their parents college expectation, as compared with those children who are in the shared low expectation category.

<div align="center">(Figure 4 about here)</div>

Figure 5 shows the same pattern when we examine the predicted probability of children's completion of secondary education. Again, within each quintile of family wealth, children benefit from parent-child agreement in college expectation. The benefits are most obvious among families in the 2nd and 3rd wealth quintiles. Among children from these families, those children who share with their parents college expectations have their probabilities of completing secondary education almost 20 percent higher as compared to children who are in the low expectation category, where both child and parents have lower than college expectations. The positive impact of shared college expectations is even stronger for the completion of secondary education. Again it indicates that for rural children to finish secondary education requires the combined determination of parents and children. The findings provide support to the hypothesis that the parent- child agreement in expectations at high level help to moderate the negative impact of lack of economic resources on children's educational attainment.

<div align="center">(Figure 5 about here)</div>

Summary and Discussion

This study examines the factors that may influence parents' and children's expectation formation, and the impact of these early expectations on children's later educational outcomes, paying special attention to parent-child alignment and discrepancy in their college expectation. The analysis reveals that in rural Gansu, discrepancy in educational expectations between parents and children is substantial. About half of the parents had expectations lower than those of their children. Given that children in rural Gansu have very high expectations, this is not surprising. Nevertheless, some parents held higher expectations than those of their children. As children advance in their schooling, more parents share with their children college expectations.

The SEM analysis reveals that there is very limited reciprocal influence between parents and children on how they form and change their expectations over time, taking into consideration family background and child school achievement. On the other hand, it is the community shared education values that shape parents' expectations. Parents tend to have higher expectations if there are in general high expectations among other parents in the village. For children, how they perceived their school experience is closely tied to how they form their expectations: their feeling of disengagement suppress their expectations, while they tend to have higher expectations if they consider themselves making efforts at school work. Family economic situation is still a concern for parents when forming their expectations, not only the resource they have, but also family credit limit. But family economic situation does not influence how children form their expectations.

Both parents' and children's early educational expectations are strong predictors of children's later educational outcomes. The high hopes that children carried in their early days have strong positive impact on their later education outcomes. Children with high expectations have better chance to finish compulsory schooling, stay in school, and to finish compulsory and secondary education. Parents' early expectations have the same positive influence, though not as strong as children's own expectations. Controlling for parents' and children's expectations, family SES still presents some barriers to children's school persistence, especially for children's completion of secondary education.

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Paying special attention to the situation where both parents and children have high expectations, we see that children have better educational outcomes when they and their parents share the college expectation. Children are more likely to complete compulsory and secondary education when there is combined determination of both parents and children, as compared to other children from families with similar economic situations. And this positive impact hold even for children from families that are mostly in lack of economic resources.

Two main findings from this study are important for furthering our understanding of educational stratification in rural China. First, to understand how children and their parents form their educational expectations in the setting where there is still prevailing poverty, we need to consider factors other than conventionally considered, such as family socioeconomic status, child gender, and children' previous school performance. The community shared education values are closely associated with how parents form their expectations. As for children, their school experiences have much influence on whether they make the commitment to continue their schooling. Second, parents' and children's early educational expectations are strong predictors of children's later educational attainment, as shown by many previous studies. Moreover, the agreement in expectations between parents and children at high level, in this case, the hope of college education, increase their chances of completing compulsory and secondary education. Children who are from impoverished families, those who usually face the high risk of dropping out, can really benefit from the joint determination of parents and children. The results also indicate that the educational expectations of rural parents are more than abstract attitudes about education. By holding high expectations, parents and children together create a supportive home environment that helps to compensate the lack of other resources in the rural settings. In this sense, the high expectations of parents and children can be considered as proxy of home resources that cannot be measured by the conventional family SES. This study also provides information for the newly launched campaign that stresses education at home, and the collaborative efforts of school and family in education (The Central Government 2010).

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Table 1. Descriptive Statistics of Educational Outcomes

	Mean	(SD)	95% Conf. Interval		N
Enrollment 2007 (Full sample)	0.667	(0.471)	0.643	0.690	1594
Enrollment 2009 (Full sample)	0.509	(0.500)	0.483	0.534	1518
Enrollment 2009 (Among Those Who were Enrolled in 2007)	0.695	(0.461)	0.666	0.723	1017
Completion of Compulsory Education (Full Sample)	0.858	(0.349)	0.839	0.875	1518
Completion of Secondary Education (Full sample)	0.314	(0.464)	0.290	0.338	1518
Completion of Secondary Education (Among Those Who Have Completed Compulsory Education)	0.362	(0.481)	0.336	0.389	1302

Table 2. Descriptive Statistics and Correlation of Educational Expectations

		Correlation					Mean	(SD)	Min.	Max.
		1	2	3	4	5				
1	Child Expectation (Wave 1)	1.00					13.91	2.89	6	16
2	Child Expectation (Wave 2)	0.11	1.00				14.84	2.21	6	16
3	Parents Expectation (Wave 1)	0.18	0.09	1.00			12.14	2.80	6	16
4	Parents Expectation (Wave 2)	0.12	0.12	0.23	1.00		13.29	2.62	6	16
5	Math Grade (Wave 1)	0.19	0.13	0.22	0.23	1.00	74.72	14.12	0	100
6	Math Grade (Wave 2)	0.10	0.15	0.13	0.14	0.23	72.01	16.86	1	100

Table 3. Structural Equation Modeling Regression of Expectations

	Parent Expectation (W1)		Child Expectation (W1)		parent Expectation (W2)		Child Expectation (W2)	
Math Grade	0.168	***	0.073	**	0.052	**	0.107	***
	(0.026)		(0.028)		(0.024)		(0.026)	
Child Disengagement from School			-0.070	***			-0.123	***
			(0.025)				(0.025)	
Child Self-Evaluation			0.160	***			0.066	**
			(0.024)				(0.025)	
Community Shared Education Value	0.330	***			0.338	***		
	(0.024)				(0.023)			
Family Credit Limit (Very limited as Reference)								
Less Limited	0.105	***			0.096	***		
	(0.031)				(0.035)			
Least Limited	0.147	***			0.120	***		
	(0.027)				(0.030)			
Family Wealth(Logged)	0.057	**	0.037		0.038	*	-0.010	
	(0.025)		(0.025)		(0.023)		(0.025)	
Parents Total Education (Years)	0.060	**	0.069	***	0.055	**	0.076	***
	(0.025)		(0.026)		(0.024)		(0.027)	
Number of Children in Family	-0.048	**	-0.017		0.000		-0.028	
	(0.024)		(0.025)		(0.023)		(0.025)	
Girl	-0.097	***	-0.024		-0.039	*	-0.023	
	(0.024)		(0.025)		(0.022)		(0.025)	
Child Age	0.057	**	-0.026		0.101	***	0.064	**
	(0.024)		(0.025)		(0.022)		(0.025)	

Note: standardized coefficients are presented. Robust standard errors in parenthesis.
Excluding expectation coefficients.

*p<0.1 **p<0.05 ***p<0.01

Table 4. Logistic Regression of Educational Outcomes (Village Random Effects)

	Enrollment in 2007	Enrollment in 2009 (Among those who were enrolled in 2007)	Completion of Compulsory Education	Completion of Secondary Education (Among those who Completed Compulsory Education)
Predicted Parent Expectation	1.309***	1.342***	1.580***	1.080
	(3.363)	(3.473)	(4.648)	(1.151)
Predicted Child Expectation	1.989***	1.452**	1.705***	1.751***
	(4.588)	(2.046)	(2.750)	(3.357)
Math Grade	1.016***	1.008	0.985**	1.001
	(3.441)	(1.515)	(-2.485)	(0.126)
Family Wealth First Quintile (Reference)				
Family wealth Second Quintile	1.211	1.106	1.314	1.182
	(0.968)	(0.417)	(1.132)	(0.741)
Family wealth Third Quintile	1.246	1.190	1.241	1.700**
	(1.108)	(0.722)	(0.871)	(2.424)
Family wealth Fourth Quintile	1.485*	1.221	1.649*	1.705**
	(1.902)	(0.817)	(1.840)	(2.443)
Family wealth Fifth Quintile	0.898	0.810	1.538	1.433
	(-0.517)	(-0.839)	(1.513)	(1.644)
Parent Total Education (Year)	1.027**	1.011	1.037**	1.031**
	(2.123)	(0.707)	(2.098)	(2.298)
Number of Children in Family	1.062	1.051	0.886	1.095
	(0.664)	(0.450)	(-1.045)	(0.943)
Girl	0.824	1.017	1.205	0.927
	(-1.551)	(0.114)	(1.106)	(-0.572)
Child Age	0.613***	0.846**	1.084	2.070***
	(-7.819)	(-2.334)	(1.017)	(10.880)
Constant	0.001***	0.001***	0.000***	0.000***
	(-3.879)	(-3.113)	(-4.971)	(-9.897)
Log-Likelihood	-884.94	-590.64	-540.33	-718.77
N	1,594	1,018	1,518	1,302

note: *** p<0.01, ** p<0.05, * p<0.1

Appendix: Descriptive Statistics of Measures Used in Analysis

	Mean or Proportion	SD	Min.	Max.	N
Child Expectation (wave 1)	13.914	2.885	6	16	1589
Child Expectation (wave2)	14.845	2.208	6	16	1591
Parent Expectation (wave 1)	12.142	2.804	6	16	1588
Parent Expectation (wave2)	13.291	2.622	6	16	1561
Child Gender	0.450	0.498	0	1	1594
Child Age	14.984	1.132	12	18	1594
Math Grade (wave 1)	74.720	14.122	0	100	1586
Math Grade (wave 2)	72.088	16.778	1	100	1594
Child Disengagement (wave 1)	0.205	0.404	0	1	1594
Child Disengagement (wave 2)	0.172	0.378	0	1	1594
Child Self-Evaluation (wave1)	0.580	0.494	0	1	1594
Child Self-Evaluation (wave2)	0.595	0.491	0	1	1594
Parents' Total Education	11.422	5.806	0	27	1594
Total Number of Children in Family	2.312	0.702	1	6	1594
Logged Family Wealth	9.626	0.918	6.337	13.897	1594
Community Shared Education Value (Wave 1)	12.102	1.366	6.000	16	1588
Community Shared Education Value (Wave 2)	13.028	1.521	6.667	16	1561

	Very Limited	Less Limited	Least Limited		N
Family Credit Limit (wave 1) (%)	18.22	65.45	16.33		1594
Family Credit Limit (wave2) (%)	12.05	69.13	18.82		1594