The Role of Educational Aspirations and Expectations in the Discontinuity of Intergenerational Low-Income Status

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This study investigated one potential mechanism mediating continuity and discontinuity in low-income status across generations: children's educational aspirations and expectations. Data were drawn from a community sample of 808 participants who were followed from age 10 to 30. Four trajectory groups of children's educational aspirations and expectations were identified from ages 10 to 18 (grades five through 12): "stable-high" group, "stable-low" group, "increaser" group, and "decreaser" group. Among participants from low-income families, those in the stable-high group and the increaser group were equally likely to graduate from high school. High school graduation was positively associated with level of total household income at age 30. Findings suggest that social work efforts that support the development of high educational aspirations and expectations in children might serve to reduce the intergenerational continuity of low-income status.

KEY WORDS: *adult income; childhood poverty; educational aspirations; low income*

In 2008, about 14 million children lived at or below the official poverty line in the United States (U.S. Census Bureau, 2008b). Numerous population-level studies have shown that poverty predicts negative developmental outcomes for children (Aber, Bennett, Conley, & Li, 1997; Brooks-Gunn & Duncan, 1997; Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Guo & Harris, 2000; McLoyd, 1990). It is troubling that childhood poverty might not be a transitory experience. Research findings have suggested that children who grow up in poverty are more likely to be poor in adulthood (Corcoran & Adams, 1997; Harper, Marcus, & Moore, 2003; McKay & Lawson, 2003; Rodgers, 1995). However, a few studies have documented that the intergenerational cycle of poverty is not certain; some children raised in poor families escape poverty in adulthood (Corcoran, 2001; Rodgers, 1995). For example, using a cohort of the Panel Study of Income Dynamics, Corcoran (2001) found that around 24% of children raised in poor families were poor in young adulthood, whereas the remaining 76% were not poor when they entered adulthood. Despite the finding of fairly high rates of discontinuity in economic status across generations, far less is understood about the mechanisms by which children from low-income families manage to escape poverty (Breen & Jonsson, 2005).

Studies have shown that education predicts continuity and discontinuity of low-income status across generations (Blau & Duncan, 1967; Bourdieu & Passeron, 1990; Downey, Paul, & Broh, 2004; Giroux, 1983; Grubb & Lazerson, 2004; Haller & Portes, 1973; Nieto, 2005; Sewell & Hauser, 1972). Blau and Duncan (1967) investigated the extent to which men's adult occupational status depended on their family background. They concluded that a child's educational attainment is an important determinant of that person's adult economic status, even after controlling for the father's occupational status. The positive association between educational attainment and adult economic status has been found consistently (Chen & Kaplan, 2003; Haveman & Smeeding, 2006; Kao & Thompson, 2003; Porter, 2002; Sewell, 1971; Wilson, 2001), which indicates that education promotes an escape from poverty across generations. High school graduates' mean earnings are $9,802 higher than those of high school dropouts (U.S. Census Bureau, 2008a), and high school graduates are more likely to be employed compared with high school dropouts (Caspi, Wright, Moffit, & Silva, 1998; Goldschmidt &

Wang, 1999). Oxford, Lee, and Lohr (2010) reported that the odds of *economic hardship* in adulthood, defined as having an income-to-needs ratio below 1:85, were almost two times higher for those who did not complete their secondary education by age 19.

Yet for a large proportion of children from low-income families, public K–12 education fails to serve as a route out of poverty (Bowles & Gintis, 1976; Counts, 1932; Entwisle, Alexander, & Olson, 2003; Grubb & Lazerson, 2004; Lareau, 2000; Nieto, 2005; Oakes, 2005). The disparity in educational outcomes by socioeconomic status is well documented. The percentage of those who underachieve in educational outcomes remains much higher for children from low-income families compared with those who are not from low-income families (Hearn, 1991; Morgan, 1996; Rouse & Barrow, 2006; Sewell & Hauser, 1972). Low-income status is negatively associated with high school completion (Haveman, Wolfe, & Spaulding, 1991; Laird, Lew, DeBell, & Chapman, 2006; Newcomb et al., 2002), a minimum requirement for many jobs (Rumberger, 1987). In 2006, 16.5% of children from families in the lowest income quartile dropped out of high school compared with 3.8% of those from families in the highest income quartile (U.S. Department of Education National Center for Education Statistics, 2007). Given the well-documented connection between educational attainment and adult economic status, it is likely that the disparity in educational attainment by socioeconomic status translates into continuity in economic adversity from one generation to the next.

However, educational experiences might not necessarily dictate continuity in poverty across generations. For example, Benner and Mistry (2007) demonstrated that some low-income children avoid academic failure despite economic adversity. Similarly, Downey et al. (2004) demonstrated that the gap in cognitive skill gains by socioeconomic status decreased when schools were in session compared with when they were not and argued that educational experiences have the potential to serve as an economic equalizer. Thus, there is some evidence that education might also serve to predict discontinuity in poverty across generations, at least for some children. This leads to the question of what factors predict such differences in educational experiences and adult income among low-income children.

Previous studies on educational outcomes have suggested that intrapersonal achievement-related characteristics are positively associated with educational outcomes (Akerlof & Kranton, 2002; Benner & Mistry, 2007; Eccles & Wigfield, 2002; Frome & Eccles, 1998). Specifically, it has been suggested that educational aspirations and expectations are important predictors of educational and occupational status in adulthood (Campbell, 1983; Haller & Portes, 1973; Kao & Thompson, 2003; MacLeod, 1995; Sewell, Haller, & Portes, 1969; Sewell & Hauser, 1972). Beal and Crockett (2010) reported that adolescent educational expectations were positively associated with educational attainment in young adulthood. Sewell and Hauser (1972) demonstrated that educational aspirations of high school seniors predicted their educational attainment at the age of 25, and educational attainment, in turn, positively predicted earnings at age 28. Feliciano and Rumbaut (2005) reported that educational expectations in high school increased expected occupational status at the age of 30.

Several theorists have suggested that educational aspirations and expectations change over the course of adolescence (Eccles, Barber, Stone, & Hunt, 2003; Gottfredson, 1981). Beal and Crockett (2010) reported that more than one-third of the adolescents in their study ($N = 317$) shifted to higher or lower educational expectation categories. Similarly, Cooper (2009) documented that educational aspirations fluctuated between 10th and 12th grade: In that sample of African American male students who aspired to get a bachelor's degree at 10th grade, 25.1% increased their educational aspirations (a graduate degree), whereas 24.2% decreased their educational aspirations (less than a bachelor's degree). Similarly, Fredricks and Eccles (2002) showed that children's belief in math competence declined from childhood to adolescence. However, to our knowledge, no studies have linked changes in educational aspirations and expectations over the course of adolescence with long-term academic outcomes and adult economic status, especially among children from low-income families. In extant studies, educational expectation has been modeled as a single point in time or averaged over study points.

Findings based on such analyses provide limited guidance toward the formation of intervention and policy (Feinstein & Peck, 2008). It is important to understand the longitudinal development of educational aspirations and expectations as they relate to achievement so that the timing of preventive interventions can be pinpointed. Thus, rather than using a single time point or cross-year average, we used a strategy (growth mixture modeling [GMM]) that identified groups of children following different trajectories of educational aspirations and expectations.

In the present study, we sought to understand how children from low-income families escape poverty in adulthood by analyzing a contemporary sample from a longitudinal panel study that followed participants from age 10 to 30. We hypothesized that trajectories of children's educational aspirations and expectations would predict educational attainment and economic status in adulthood.

METHOD

Sample

The data set we used is from the Seattle Social Developmental Project (SSDP). The SSDP is a theory-driven panel study that has collected extensive longitudinal information on a sample of 808 participants who attended schools serving disadvantaged neighborhoods in Seattle, Washington. The SSDP followed these participants during the years 1985 to 2005, from the time they were age 10 to age 30, and conducted periodic surveys regarding their experiences in family, school, and community to examine participants' social, psychological, and economic well-being. The longitudinal nature of these data makes it possible to investigate the predictive power of children's educational aspirations and expectations over an extended period and to examine their long-term connection to adult economic status. The demographic data indicate that the sample is gender balanced and ethnically diverse. Of the 808 participants, 49% were female and 51% were male; 47% were European American, 26% were African American, 22% were Asian American, and 5% were Native American or other ethnic group identity. Over 52% of the participants were from economically disadvantaged families as indicated by eligibility for the National School Lunch/

School Breakfast Program across the fifth and seventh grades. SSDP sample retention rates were consistently high: Over 93% of the original participants were interviewed at each of the last five interview waves. Data collection procedures were approved by the Human Subjects Review Committee of the University of Washington, Seattle. Further details about the SSDP study and its underlying theory appear in several published articles (Catalano & Hawkins, 1996; Catalano, Kosterman, Hawkins, Newcomb, & Abbott, 1996; Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999).

Measures

Childhood low-income status was derived from school archival data and defined by free lunch eligibility from fifth grade to seventh grade. We coded students as 1 if they had been eligible for free school lunch at any time during the fifth, sixth, or seventh grade and 0 if they had never been eligible for free lunch during those grades.

Educational aspirations and expectations were assessed separately from fifth to 12th grade and were combined into a single derived variable. Educational aspiration was measured by quantifying answers to the question, "Eventually, how much schooling do you want to get?" using a four-point scale (0 = go to high school for a while, 1 = finish high school, 2 = go to college for a while, 3 = finish college). Educational expectation was measured through the use of the same question (with the word *expect* replacing the word *want*) and on the same four-point scale. We calculated the mean (range: 0–3) of these two items at each study point, given that they are highly correlated in the SSDP sample ($.60 < r < .79$, $p < .000$), where higher scores indicate higher educational aspirations and expectations.

High school graduation (age 21) is a dichotomous variable for which high school graduation was coded "1" and anything other was coded "0."

Economic status in adulthood was defined as total household income level (unit = $1,000), adjusted for the total number of household members at age 30. For those not living in the United States, their total household income was converted into U.S. dollars using the appropriate currency exchange rates at the time of data collection.

Control variables included students' gender (0 = female, 1 = male), a series of dummy variables representing each ethnic group (African American, Asian American, and Native American, with Caucasian American as the reference group), and achievement scores at fifth grade. Achievement scores were measured using reading, language, and math subsets of the California Achievement Test, a widely used standardized achievement battery (Wardrop, 1989).

Analysis

We carried out a series of growth mixture models using Mplus 5.0 to examine the possibility that participants experienced changes in educational aspirations and expectations over the course of adolescence. GMM is an extension of conventional growth curve models (Collins, 2006; Muthén & Muthén, 2000) in which latent growth factors for individuals are identified along with a shared population mean growth and a covariance structure representing individual differences from the mean (Collins, 2006; Nagin, 1999). Unlike conventional growth curve models, GMM assumes that a population comprises distinct subgroups. Accordingly, subgroup-specific growth factors are estimated using iterative procedures.

As per suggestions in prior mixture modeling studies (Clark & Muthén, 2009; Feldman, Masyn, & Conger, 2009; Nagin & Odgers, 2010), we first estimated GMM without any predictors or distal outcomes to determine the number of trajectory groups, which were chosen on the basis of the model fit statistics, group sizes, and the theoretical meaningfulness of the solution for the present study (Muthén & Muthén, 2000). Fit statistics examined included entropy, Bayesian information criterion (BIC), and the Lo–Mendell–Rubin likelihood ratio test (lower p values indicate that the K-group model is preferable over the $K–1$ group model).

After the number of groups was chosen, predictors and controls (that is childhood poverty, gender, ethnicity, and achievement scores) and distal outcomes (that is high school graduation [age 21] and economic status [age 30]) were added to a model. In this final model, group-specific growth factors were fixed to be the values from the first model. In addition, we conducted a subgroup analysis of the low-income children to test the degree to which the hypothesized tripartite linkage of educational aspirations and expectations, on-time high school graduation, and better economic status in adulthood held true.

Missingness was handled with full-information maximum likelihood estimation in Mplus 5.0, which is preferable to traditional strategies (for example, complete case analysis) for analyzing incomplete data (Acock, 2005; Buhi, Goodson, & Neilands, 2008; Schafer & Yucel, 2002).

RESULTS

Identification of Educational Aspirations and Expectations Trajectories

The data displayed in Table 1 indicate that students' educational aspirations and expectations fluctuated and decreased slightly over time (M = 2.50 at fifth grade, M = 2.23 at 12th grade), which is consistent with findings from a conventional growth model for educational aspirations and expectations (slope = −.04).

Potential differences in trajectories of educational aspirations and expectations were examined by estimating one-, two-, three-, four-, and five-group models. Model fit statistics provided conflicting results as to the best fitting model. BIC values up to and including the five-group solution were 10,435.72, 10,144.96, 10,062.05, 9,941.12, and 9,906.37, respectively. With the addition of each group, the difference in BIC values between the $K–1$ group and K group was >6, an indication of strong improvement in model fit (Raftery, 1995). The Lo–Mendell–Rubin test remained statistically significant for each comparison through the four-group versus three-group model comparisons. However, comparisons of the five-group model with the four-group model were not statistically significant. This suggested that the four-group solution fit the data best. Entropy values for two-, three-, four-, and five-group models were .90, .85, .88, and .85, respectively, indicating a clear group classification (>.80) in all models. It is important to note that the four-group solution also provided conceptually distinct subgroups of educational aspirations and expectations with reasonable group sizes. Thus, the four-group model was accepted as the best fitting model with reasonable group sizes and theoretical meaningfulness.

The majority of participants (66.8%) belonged to the stable-high group, who at fifth grade

Table 1: Descriptive Statistics for Study Variables

Variable	Full Sample M (SD) / %	Full Sample n	Low-Income Sample M (SD) / %	Low-Income Sample n
Educational aspirations/expectations				
5th grade	2.50 (0.80)	797	2.44 (0.84)	415
6th grade	2.61 (0.75)	553	2.47 (0.86)	287
7th grade	2.58 (0.69)	650	2.50 (0.75)	334
8th grade	2.50 (0.77)	776	2.36 (0.84)	399
9th grade	2.53 (0.72)	783	2.42 (0.77)	404
10th grade	2.42 (0.80)	770	2.32 (0.84)	393
12th grade	2.24 (0.79)	757	2.16 (0.83)	388
Childhood low income[a]				
No	47.6			
Yes	52.4			
High school graduation[b]				
No	18.7		27.1	
Yes	81.3		72.9	
Economic status in adulthood (per capita household income)[c]	26.99 (23.21)	643	23.25 (22.09)	319
Gender[d]				
Female	49		51.5	
Male	51		48.5	
Ethnicity				
Caucasian American	47.2		28.1	
African American	25.6		36.9	
Asian American	21.9		28.4	
Native American	5.3		6.6	

Notes: Both educational aspirations and educational expectations were measured on the same four-point scale (0 = go to high school for a while, 1 = finish high school, 2 = go to college for a while, 3 = finish college). The mean of these two items at each study point ranged from 0 to 3.
[a]Childhood low income was defined by free lunch eligibility from fifth grade to seventh grade. Students were coded as 1 if they had been eligible for free school lunch at any time during the fifth, sixth, or seventh grade. Students who were never eligible for free lunch during those grades were coded as 0.
[b]High school graduation is a dichotomous variable for which high school graduation was coded 1 and anything other was coded 0.
[c] In units of $1,000.
[d]Gender is a control variable for which male was coded 1 and female was coded 0.

expected to attain at least some college and maintained their high expectation over the course of their schooling. About 15.6% of the participants were in the decreaser group, whose members were almost identical to the stable-high group at their starting point but whose educational aspirations and expectations decreased rapidly. Approximately 8.8% of the sample was in the low-stable group, who at fifth grade thought they were unlikely to pursue education beyond high school and who stayed relatively low in their educational aspirations and expectations over time. About 8.8% of the sample were in the increaser group and started with low educational aspirations and expectations at fifth grade, but their educational aspirations and expectations increased over time. Children from low-income families comprised 45.5% of the stable-high group, 63.5% of the decreaser group, 67.6% of the stable-low group, and 69% of the increaser group.

Table 2: Multinomial Logistic Regression: Childhood Low Income Predicting Educational Aspirations and Expectations Trajectory Group

Trajectory Group	Exp (β)	95% CI Lower Bound	95% CI Upper Bound
Stable-low	2.25	1.06	4.80
Increaser	3.02	1.60	5.71
Decreaser	2.25	1.28	3.98

Notes: The regression was adjusted for gender, ethnicity, and early achievement score. CI = confidence interval. Stable-high group (referent, not shown) = participants who at fifth grade expected to attain at least some college and maintained their high aspirations and expectations over time. Stable-low group = participants who at fifth grade thought they were unlikely to pursue education beyond high school and who stayed relatively low in their aspirations and expectations over time. Increaser group = participants whose aspirations and expectations increased over time. Decreaser group = participants who were similar to the stable-high group at their starting point but whose educational aspirations and expectations decreased rapidly.

Childhood Low-Income Status, Trajectories, and Adulthood Economic Status

The data in Table 2 indicate that a child's membership in the different educational aspirations and

expectations groups was in part predicted by the child's family income. Growing up in a low-income family increases the odds of belonging to the stable-low group by about two times (odds ratio [OR] = 2.25), the increaser group by about three times (OR = 3.02), and the decreaser group by about two times (OR = 2.25), compared with the stable-high group. Thus, trajectories of educational aspirations and expectations differed by childhood low-income status. However, children from low-income backgrounds were not uniform in their educational aspirations and expectations. About 58.1% of children from low-income families were in the stable-high group compared with 76.4% of children who were not from low-income families. About 19% of the children from low-income families were in the decreaser group compared with 11.9% of children who were not from low-income families. About 11.4% of children from low-income families were in the stable-low group compared with 6% of children who were not from low-income families. It is important to note that about 11.6% of the children from low-income families were in the increaser group compared with 5.7% of children who were not from low-income families.

These differences in trajectories of educational aspirations and expectations predicted differences in high school graduation. Table 3 displays the probabilities for high school graduation calculated for each trajectory group. Those in the stable-high group had the highest probability of graduating from high school ($p = .93$). Those in the increaser group had the next highest probability of high school graduation ($p = .82$). In contrast, those in the decreaser group were much less likely to graduate from high school ($p = .54$). It is not surprising that those in the stable-low group were the least likely to graduate from high school on time ($p = .47$). Wald tests indicated—with the exception of the comparison of those with decreasing

educational aspirations and expectations and those with stable-low educational aspirations and expectations (Wald $\chi^2 = 0.63$, $p = .43$) that these groups were statistically different from each other in the probability of high school graduation.

These findings were replicated among the children from low-income families (see Table 3): Those in the stable-high group were most likely to graduate from high school ($p = .89$). Those in the increaser group were the next likely to graduate from high school ($p = .81$). Those in the decreaser group were less likely to graduate from high school ($p = .49$). Those in the stable-low group were least likely to graduate from high school on time ($p = .32$). Wald tests indicated that these probabilities differed across the trajectory groups of children from low-income families. However, those from low-income families in the stable-high and increaser groups did not differ significantly in the probability of high school graduation (Wald $\chi^2 = 1.54$, $p = .22$). Further, those from low-income families in the decreaser and stable-low groups did not differ significantly at the $p < .05$ level in the probability of on-time high school graduation (Wald $\chi^2 = 2.36$, $p = .12$). It is noteworthy that probabilities of high school graduation were slightly lower for children from low-income families than for children in general within each trajectory group. Wald tests indicated that these probabilities differed by low-income status in the stable-high group (Wald $\chi^2 = 8.23$, $p < .01$) and the stable-low group (Wald $\chi^2 = 7.04$, $p < .01$).

High school graduation predicted total household income at age 30 ($\beta = 7.35$, $p < .001$) (see Table 4). In the full sample, high school graduation resulted in a $7,350 expected increase in participants' total household income at age 30. Analysis of participants from low-income families showed that high school graduation was positively associated with the level of total household

Table 3: Probabilities for High School Graduation, by Trajectory Group

Sample	Trajectory Group			
	Stable-High	Increaser	Decreaser	Stable-Low
Full	.93	.82	.54[a]	.47[a]
Low income	.89[a]	.81[a]	.49[b]	.32[b]

Notes: Stable-high group = participants who at fifth grade expected to attain at least some college and maintained their high aspirations and expectations over time. Increaser group = participants whose aspirations and expectations increased over time. Decreaser group = participants who were similar to the stable-high group at their starting point but whose educational aspirations and expectations decreased rapidly. Stable-low group = participants who at fifth grade thought they were unlikely to pursue education beyond high school and who stayed relatively low in their aspirations and expectations over time. Per Wald chi-square tests, probabilities in a row sharing the same subscripts do not differ at $p < .05$.

income at age 30 ($\beta = 8.72$, $p < .001$). For those from low-income families, high school graduation resulted in an \$8,720 increase in participants' total household income at age 30. It is notable that the complex analysis limited the statistical program's ability to provide a concise statistical indicator of effect size. As an alternative, we assigned participants to latent trajectories of aspirations and expectations and conducted a follow-up regression analysis (adjusted $R^2 = .14$ and .19 for the full sample and the low-income sample, respectively).

We also examined the direct effect of the trajectories of aspirations and expectations on adult income in a separate analysis in which high school graduation was excluded. The means for adult income were calculated for each trajectory group (Table 5). Those in the stable-high group had the highest adult income ($M = \$30,980$). Those in the increaser group had the next highest adult income ($M = \$24,300$). Adult income for those in the decreaser group followed ($M = \$18,610$), and those in the stable-low group had the lowest adult income ($M = \$15,430$). Wald tests indicated that a significant difference was found between those in the stable-high group and those in the decreaser group (Wald $\chi^2 = 54.38$, $p < .001$). Those in the stable-high group were also different from those in the stable-low group (Wald $\chi^2 = 39.14$, $p < .001$).

Among low-income children, those in the stable-high group had the highest adult income ($M = \$28,230$). Those in the increaser group had the next highest adult income ($M = \$19,520$). Adult income for those in the decreaser group followed ($M = \$17,450$). The group with stable-low educational aspirations and expectations had the lowest adult income ($M = \$11,170$). We found that differences in trajectories of educational aspirations and expectations were clearly linked to differences in means for adult income among low-income children more so than among the full sample. Wald tests indicated—with the exception of the comparison of those in the increaser group with those in the decreaser group (Wald $\chi^2 = 0.30$, $p = .58$)—that these groups were statistically different from each other in the mean of adult income.

DISCUSSION

In the present study, we examined potential mechanisms mediating continuity and discontinuity of low-income status across generations: educational aspirations and expectations and high school graduation. In both the full sample and in the subsample of children from low-income families, the findings were consistent with the hypothesis that educational aspirations and expectations predict high school graduation, which, in turn, predicts household income at age 30. These findings suggest that both consistently high and increasing educational aspirations and expectations over time might mediate the intergenerational continuity and discontinuity of low-income status. Four distinct groups of adolescents were identified with regard to educational aspirations and expectations: a stable-high group, an increaser group, a decreaser group, and a stable-low group.

Our analyses indicated that differences in the trajectories of these four groups predicted differences in the probability of high school graduation and adulthood economic status. The probability of graduating from high school was similar across these four groups in the full sample and in the subsample of children from low-income families. In both the full sample and in the subsample from

Table 4: Regression Analysis: High School Graduation Predicting Adult Income (Age 30 Years)		
Sample	**â²**	**SE**
Full	7.35*	1.98
Low income	8.72*	2.42

Notes: Data are given in units of \$1,000. The regression was adjusted for gender, ethnicity, and childhood low-income status.
*$p < .01$.

Table 5: Means for Adult Income, by Trajectory Group				
	Trajectory Group			
Sample	**Stable-High**	**Increaser**	**Decreaser**	**Stable-Low**
Full	30.98$_a$	24.30$_{a,b,c}$	18.61$_{c,d}$	15.43$_{b,d}$
Low income	28.23	19.52$_a$	17.45$_a$	11.17

Notes: Data are given in units of \$1,000. Per Wald chi-square tests, means in a row sharing the same subscripts do not differ at $p < .05$.

low-income families, those in the decreaser group did not have a significantly better probability of graduating from high school than did those in the stable-low group; both of these groups were significantly less likely to graduate from high school than were children in the stable-high and increaser groups. These findings suggest that both decreasing educational aspirations and expectations and consistently low educational aspirations and expectations are detrimental to educational attainment.

It is also worth noting that the direct effect of educational aspirations and expectations on adult income was more evident in the subsample of children from low-income families than in the full sample. These findings suggest that educational aspirations and expectations might operate in a particularly protective manner for students from low-income families. However, this finding should be interpreted cautiously, given that this direct effect was tested without adjustment for high school graduation because of the complexity of the full model (that is, having both the latent trajectory variable and a dichotomous high school graduation variable).

High school graduation predicted the level of total household income at age 30 in the full sample and in the subsample of participants from low-income families. These findings suggest that universal prevention programs designed to maintain high educational aspirations and expectations or increase educational aspirations and expectations benefit not only children from low-income families but also those who are not from low-income families.

As hypothesized, childhood low-income status predicted differences in longitudinal trajectories of educational aspirations and expectations. Children from low-income families were less likely to belong to the stable-high group than were those who did not come from low-income families. Yet, children from low-income families were distributed across the four trajectories: 58.1% of children from low-income families were in the stable-high group and 11.6% were in the increaser group. However, 19% of the children from low-income families were in the decreaser group and 11.4% were in the stable-low group. It is important to note that even among children from low-income families, the stable-high and increaser groups were most likely to graduate from high school and were expected to experience an increase in income level in adulthood. Those in the

stable-high and increaser groups did not differ significantly in the probability of high school graduation. It is possible that increasing the educational aspirations and expectations over time of children from low-income families would increase the probability of high school completion. Therefore, increasing and maintaining educational aspirations and expectations might play a promising role in helping children from low-income families complete high school and achieve a higher socioeconomic status than did their parents.

It is also noteworthy that children from low-income families were more likely to be in the decreaser group than in the stable-low group. These participants appear to have had high hopes for their future academic success at the end of their elementary schooling but that their aspirations and expectations diminished during the secondary grades. It is important to understand the factors that contribute to decreasing educational aspirations and expectations among children from low-income families during adolescence.

Studies in child development provide insights. The literature consistently emphasizes the importance of context and the dynamic transaction between contexts and individual capacities that constantly shapes human growth and well-being (Harper et al., 2003; Howard, 2000; Kondrat, 2002). In particular, the literature emphasizes the significance of family (Bronfenbrenner & Morris, 1998; Frome & Eccles, 1998; Hawkins et al., 1999) and school (Abbott et al., 1998; Bronfenbrenner & Morris, 1998; Eccles & Roeser, 2003; Eccles & Wigfield, 2002; Hawkins et al., 1999) as contextual influences on child development. For example, Crosnoe, Mistry and Elder (2002) reported that socioeconomically disadvantaged parents held a more pessimistic view about their children's chances in academic attainment and thus were less actively investing in their children's academic success. Such parental expectations and parenting practices might influence children's educational aspirations and expectations. Schools also influence children's aspirations and expectations through their organizational, social, and instructional processes (Eccles, 2004). The differences in longitudinal patterns of educational aspirations and expectations identified in the present study are likely to have been influenced by the social contexts in which children develop. For example, members of the stable-high and increaser

groups might have been raised by parents with high expectations for their children's academic attainment and who allocated family resources to promote children's academic success. Their teachers might have used more effective classroom management and instructional practices, which have been shown to promote academic success (Abbott et al., 1998). Their schools and teachers might have also provided more opportunities and positive rewards for academic efforts, which have been shown to nurture positive behavior in children (Catalano & Hawkins, 1996; Catalano et al., 1996; Hawkins et al., 1999). Research is needed to understand how social contexts, including families and schools, influence the longitudinal patterns of educational aspirations and expectations from childhood through adolescence, especially for children from low-income families.

We note some limitations of the present study. First, data were collected with self-report surveys, potentially raising concerns about response bias. However, the SSDP study continually protects the confidentiality of participants and assures no negative consequences for honest participation, thus minimizing these potential sources of response bias (Del Boca & Darkes, 2003; Langenbucher & Merrill, 2001; Sigmon et al., 2005; Welte & Russell, 1993). Second, the trajectories of educational aspirations and expectations were identified by using an analytic approach that is sensitive to data, potentially limiting the generalizability of the latent group definitions. Also, the Latino population was not represented in the study sample. Given potential variability in poverty experience among this rapidly growing ethnic minority group in the United States, generalizations from this study to the Latino population should be made with caution. Future studies replicating the trajectories in different populations are needed to validate the groups identified in our study (Bauer & Curran, 2004).

This study has important strengths. It used prospective, longitudinal data spanning two decades, and it expands the existing literature by adding knowledge about longitudinal changes in educational aspirations and expectations among children from low-income families. By linking those changes to high school graduation and eventually to income in adulthood, this study clearly demonstrates the promising role of educational aspirations and expectations in discontinuity of poverty among children from low-income families. To our knowledge, there is no study incorporating all the aforementioned aspects.

Differences in longitudinal trajectories of children's educational aspirations and expectations are likely to depend on context, especially family and school factors. The present data suggest that when children from low-income families develop high educational aspirations and expectations, they are more likely to graduate from high school and are more likely to have higher income at age 30. Identifying ways of increasing and maintaining educational aspirations and expectations for children from low-income families might provide an important tool for social work efforts to break the intergenerational cycle of economic adversity. **SWR**

REFERENCES

Abbott, R. D., O'Donnell, J., Hawkins, J. D., Hill, K. G., Kosterman, R., & Catalano, R. F. (1998). Changing teaching practices to promote achievement and bonding to school. *American Journal of Orthopsychiatry*, *68*, 542–552.

Aber, J. L., Bennett, N. G., Conley, D. C., & Li, J. (1997). The effects of poverty on child health and development. *Annual Review of Public Health*, *18*, 463–483.

Acock, A. C. (2005). Working with missing values. *Journal of Marriage and the Family*, *67*, 1012–1028.

Akerlof, G. A., & Kranton, R. E. (2002). Identity and schooling: Some lessons for the economics of education. *Journal of Economic Literature*, *40*, 1167–1201.

Bauer, D. J., & Curran, P. J. (2004). The integration of continuous and discrete latent variable models: Potential problems and promising opportunities. *Psychological Methods*, *9*, 3–29.

Beal, S. J., & Crockett, L. J. (2010). Adolescents' occupational and educational aspirations and expectations: Links to high school activities and adult educational attainment. *Developmental Psychology*, *46*, 258–265.

Benner, A. D., & Mistry, R. S. (2007). Congruence of mother and teacher educational expectations and low-income youth's academic competence. *Journal of Educational Psychology*, *99*, 140–153.

Blau, P., & Duncan, O. D. (1967). *The American occupational structure*. New York, NY: John Wiley & Sons.

Bourdieu, P., & Passeron, J. (1990). *Reproduction in education, society, and culture*. Thousand Oaks, CA: Sage Publications.

Bowles, S., & Gintis, H. (1976). *Schooling in capitalist America: Educational reform and the contradictions of economic life*. New York, NY: Basic Books.

Breen, R., & Jonsson, J. O. (2005). Inequality of opportunity in comparative perspective: Recent research on educational attainment and social mobility. *Annual Review of Sociology*, *31*, 223–243.

Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (5th ed., pp. 993–1028). New York: John Wiley & Sons.

Brooks-Gunn, J., & Duncan, G. J. (1997). The effects of poverty on children. *Future of Children*, *7*, 55–71.

Buhi, E. R., Goodson, P., & Neilands, T. B. (2008). Out of sight, not out of mind: Strategies for handling missing data. *American Journal of Health Behavior, 32*, 83–92.

Campbell, R. T. (1983). Status attainment research: End of the beginning or beginning of the end? *Sociology of Education, 56*, 47–62.

Caspi, A., Wright, B. E., Moffit, T. E., & Silva, P. A. (1998). Childhood predictors of unemployment in early adulthood. *American Sociological Review, 63*, 424–451.

Catalano, R. F., & Hawkins, J. D. (1996). The social development model: A theory of antisocial behavior. In J. D. Hawkins (Ed.), *Delinquency and crime: Current theories* (pp. 149–197). New York: Cambridge University Press.

Catalano, R. F., Kosterman, R., Hawkins, J. D., Newcomb, M. D., & Abbott, R. D. (1996). Modeling the etiology of adolescent substance use: A test of the social development model. *Journal of Drug Issues, 26*, 429–455.

Chen, Z.-Y., & Kaplan, H. B. (2003). School failure in early adolescence and status attainment in middle adulthood: A longitudinal study. *Sociology of Education, 76*, 110–127.

Clark, S. L., & Muthén, B. (2009). *Relating latent class analysis results to variables not included in the analysis*. Retrieved from http://www.statmodel.com/papers.shtml

Collins, L. M. (2006). Analysis of longitudinal data: The integration of theoretical model, temporal design, and statistical model. *Annual Review of Psychology, 57*, 505–528.

Cooper, M. A. (2009). Dreams deferred? The relationship between early and later postsecondary educational aspirations among racial/ethnic groups. *Educational Policy, 23*, 615–650.

Corcoran, M. (2001). Mobility, persistence, and the consequences of poverty for children: Child and adult outcomes. In S. H. Danziger & R. H. Haveman (Eds.), *Understanding poverty* (pp. 127–161). New York: Russell Sage Foundation.

Corcoran, M., & Adams, T. (1997). Race, sex, and the intergenerational transmission of poverty. In G. J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 461–517). New York: Russell Sage Foundation.

Counts, G. S. (1932). *Dare the school build a new social order?* New York, NY: John Day.

Crosnoe, R., Mistry, R. S., & Elder, G. H. (2002). Economic disadvantage, family dynamics, and adolescent enrollment in higher education. *Journal of Marriage and the Family, 64*, 690–702.

Del Boca, F. K., & Darkes, J. (2003). The validity of self–reports of alcohol consumption: state of the science and challenges for research. *Addiction, 98*, 1–12.

Downey, D. B., Paul, T. v. H., & Broh, B. A. (2004). Are schools the great equalizer? Cognitive inequality during the summer months and the school year. *American Sociological Review, 69*, 613–635.

Duncan, G. J., Yeung, W. J., Brooks-Gunn, J., & Smith, J. R. (1998). How much does childhood poverty affect the life chances of children? *American Sociological Review, 63*, 406–423.

Eccles, J. S. (2004). Schools, academic motivation, and stage-environment. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 125–153). Hoboken, NJ: John Wiley & Sons.

Eccles, J. S., Barber, B. L., Stone, M., & Hunt, J. (2003). Extracurricular activities and adolescent development. *Journal of Social Issues, 59*, 865–889.

Eccles, J. S., & Roeser, R. W. (2003). Schools as developmental contexts. In G. R. Adams & M. D. Berzonsky (Eds.), *Handbook of adolescence* (pp. 129–148). Malden, MA: Blackwell.

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53*, 109–132.

Entwisle, D. R., Alexander, K. L., & Olson, L. A. (2003). The first grade transition in life course perspective. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the life course* (pp. 229–250). New York: Kluwer Academic/Plenum.

Feinstein, L., & Peck, S. C. (2008). Unexpected pathways through education: Why do some students not succeed in school and what helps others beat the odds? *Journal of Social Issues, 64*, 1–20.

Feldman, B. J., Masyn, K. E., & Conger, R. D. (2009). New approaches to studying problem behaviors: A comparison of methods for modeling longitudinal, categorical adolescent drinking data. *Developmental Psychology, 45*, 652–676.

Feliciano, C., & Rumbaut, R. G. (2005). Gendered paths: Educational and occupational expectations and outcomes among adult children of immigrants. *Ethnic and Racial Studies, 28*, 1087–1118.

Fredricks, J. A., & Eccles, J. S. (2002). Children's competence and value beliefs from childhood through adolescence: Growth trajectories in two male-sex-typed domains. *Developmental Psychology, 38*, 519–533.

Frome, P. M., & Eccles, J. S. (1998). Parents' influence on children's achievement-related perceptions. *Journal of Personality and Social Psychology, 74*, 435–452.

Giroux, H. A. (1983). Theories of reproduction and resistance in the new sociology of education: A critical analysis. *Harvard Educational Review, 53*, 257–293.

Goldschmidt, P., & Wang, J. (1999). When can schools affect dropout behavior? A longitudinal multilevel analysis. *American Educational Research Journal, 36*, 715–738.

Gottfredson, L. S. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. *Journal of Counseling Psychology, 28*, 545–579.

Grubb, W. N., & Lazerson, M. (2004). *The education gospel*. Cambridge, MA: Harvard University Press.

Guo, G., & Harris, K. M. (2000). The mechanisms mediating the effects of poverty on children's intellectual development. *Demography, 37*, 431–447.

Haller, A. O., & Portes, A. (1973). Status attainment processes. *Sociology of Education, 46*, 51–91.

Harper, C., Marcus, R., & Moore, K. (2003). Enduring poverty and the conditions of childhood: Lifecourse and intergenerational poverty transmissions. *World Development, 31*, 535–554.

Haveman, R., & Smeeding, T. (2006). The role of higher education in social mobility. *Future of Children, 16*, 125–150.

Haveman, R., Wolfe, B., & Spaulding, J. (1991). Childhood events and circumstances influencing high school completion. *Demography, 28*, 133–157.

Hawkins, J. D., Catalano, R. F., Kosterman, R., Abbott, R., & Hill, K. G. (1999). Preventing adolescent health-risk behaviors by strengthening protection during childhood. *Archives of Pediatrics and Adolescent Medicine, 153*, 226–234.

Hearn, J. C. (1991). Academic and nonacademic influences on the college destinations of 1980 high school graduates. *Sociology of Education, 64*, 158–171.

Howard, J. A. (2000). Social psychology of identities. *Annual Review of Sociology, 26*, 367–393.

Kao, G., & Thompson, J. S. (2003). Racial and ethnic stratification in educational achievement and attainment. *Annual Review of Sociology*, *29*, 417–442.

Kondrat, M. (2002). Actor-centered social work: Re-visioning "person-in-environment" through a critical theory lens. *Social Work*, *47*, 435–448.

Laird, J., Lew, S., DeBell, M., & Chapman, C. (2006). *Dropout rates in the United States: 2002 and 2003 (NCES 2006–062)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Langenbucher, J., & Merrill, J. (2001). The validity of self-reported cost events by substance abusers: Limits, liabilities, and future directions. *Evaluation Review*, *25*, 184–210.

Lareau, A. (2000). *Home advantage: Social class and parental intervention in elementary education* (2nd ed.). Lanham, MD: Rowman & Littlefield.

MacLeod, J. (1995). *Ain't no makin' it: Aspirations and attainment in a low-income neighborhood* (2nd ed.). Boulder, CO: Westview Press.

McKay, A., & Lawson, D. (2003). Assessing the extent and nature of chronic poverty in low income countries: Issues and evidence. *World Development*, *31*, 425–439.

McLoyd, V. C. (1990). The impact of economic hardship on Black families and children: Psychological distress, parenting, and socioemotional development. *Child Development*, *61*, 311–346.

Morgan, S. L. (1996). Trends in Black–White differences in educational expectations: 1980–92. *Sociology of Education*, *69*, 308–319.

Muthén, B., & Muthén, L. K. (2000). Integrating person-centered and variable-centered analyses: Growth mixture modeling with latent trajectory classes. *Alcoholism: Clinical and Experimental Research*, *24*, 882–891.

Nagin, D. S. (1999). Analyzing developmental trajectories: A semiparametric, group-based approach. *Psychological Methods*, *4*, 139–157.

Nagin, D. S., & Odgers, C. L. (2010). Group-based trajectory modeling in clinical research. *Annual Review of Clinical Psychology*, *6*, 109–138.

Newcomb, M. D., Abbott, R. D., Catalano, R. F., Hawkins, J. D., Battin-Pearson, S., & Hill, K. (2002). Mediational and deviance theories of late high school failure: Process roles of structural strains, academic competence, and general versus specific problem behavior. *Journal of Counseling Psychology*, *49*, 172–186.

Nieto, S. (2005). Public education in the twentieth century and beyond: High hopes, broken promises, and an uncertain future. *Harvard Educational Review*, *75*, 43–64.

Oakes, J. (2005). *Keeping track: How schools structure inequality*. New Haven, CT: Yale University Press.

Oxford, M., Lee, J., & Lohr, M. J. (2010). Predicting markers of adulthood among adolescent mothers. *Social Work Research*, *34*, 33–44.

Porter, K. (2002). *The value of a college degree. ERIC Digest.* Washington, DC: Eric Clearinghouse on Higher Education.

Raftery, A. E. (1995). Bayesian model selection in social research. *Sociological Methodology*, *25*, 111–163.

Rodgers, J. R. (1995). An empirical study of intergenerational transmission of poverty in the United States. *Social Science Quarterly (University of Texas Press)*, *76*, 178–194.

Rouse, C. E., & Barrow, L. (2006). U.S. elementary and secondary schools: Equalizing opportunity or replicating the status quo? *Future of Children*, *16*, 99–123.

Rumberger, R. W. (1987). High school dropouts: A review of issues and evidence. *Review of Educational Research*, *57*, 101–121.

Schafer, J. L., & Yucel, R. M. (2002). Computational strategies for multivariate linear mixed-effects models with missing values. *Journal of Computational and Graphical Statistics*, *11*, 437–457.

Sewell, W. H. (1971). Inequality of opportunity for higher education. *American Sociological Review*, *36*, 793–809.

Sewell, W. H., Haller, A. O., & Portes, A. (1969). The educational and early occupational attainment process. *American Sociological Review*, *34*, 82–92.

Sewell, W. H., & Hauser, R. M. (1972). Causes and consequences of higher education: Models of the status attainment process. *American Journal of Agricultural Economics*, *54*, 851–861.

Sigmon, S. T., Pells, J. J., Boulard, N. E., Whitcomb-Smith, S., Edenfield, T. M., Hermann, B. A., et al. (2005). Gender differences in self-reports of depression: The response bias hypothesis revisited. *Sex Roles*, *53*, 401–411.

U.S. Census Bureau. (2008a). *Mean earnings by highest degree earned: 2007.* Retrieved from http://www.census.gov/compendia/statab/2010/tables/10s0227.pdf

U.S. Census Bureau. (2008b). *People and families in poverty by selected characteristics: 2007 and 2008.* Retrieved from http://www.census.gov/hhes/www/poverty/data/incpovhlth/2008/table4.pdf

U.S. Department of Education National Center for Education Statistics. (2007). *Digest of education statistics 2007: Detailed tables.* Retrieved from http://nces.ed.gov/programs/digest/d07/tables/dt07_106.asp

Wardrop, J. L. (1989). Review of the California Achievement Tests, Forms E and F. In J. C. Conoley & J. Kramer (Eds.), *The tenth mental measurement yearbook* (pp. 128–133). Lincoln: University of Nebraska Press.

Welte, J. W., & Russell, M. (1993). Influence of socially desirable responding in a study of stress and substance abuse. *Alcoholism: Clinical and Experimental Research*, *17*, 758–761.

Wilson, K. (2001). The determinants of educational attainment: Modeling and estimating the human capital model and education production functions. *Southern Economic Journal*, *67*, 518–551.

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