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Familial Transmission of Educational Plans and the Academic Self-Concept: A Three-Generation Longitudinal Study

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Abstract

This research investigates the social reproduction of inequality by drawing on prospective longitudinal data from three generations of Youth Development Study respondents. It examines intergenerational influence on the relatively unexplored academic self-concept as well as educational plans, a critical component of the status attainment model. A structural equation model, based on 422 3-generation triads, finds evidence that the sources giving rise to the development of children's (Generation 3) achievement orientations do not only result from parental (G2) contemporaneous influence. Prior influences implicate grandparent (G1) educational attainment and income, grandparental expectations for the G2 adolescent, the G2 academic self-concept and educational plans measured more than twenty years earlier (in G2's adolescence), and G2 educational attainment. A familial culture emphasizing academic self-confidence and high educational expectations may be an important component of "family capital" that supports educational attainment and contributes to the maintenance of social class position in each successive generation.

Escalating inequality in families has prompted growing interest in the intergenerational transmission of advantage (Beller and Haut, 2006; Bloome and Western 2011; Bowles, Gintis, and Groves 2008; Cunha and Heckman 2008; Ferguson and Ready 2011). Since educational attainment is a key ingredient for success in modern post-industrial economies (Ganzeboom, Treiman, and Ultee 1991), much attention focuses on how parents enable their children to be successful in this realm (Conger and Dogan 2007; Crosnoe, Mistry, and Elder 2002; Lareau 2003; Taylor, Clayton, and Rowley 2004). The longitudinal and multigenerational character of the Youth Development Study (Author 2012) enables us to examine both grandparental and parental influence on children's emergent achievement

orientations. In doing so, we extend the social psychological model of status attainment by incorporating the self-concept of ability and by identifying precursors of parental expectations and child achievement orientations across generations.

Intergenerational Influence: Four Conceptual Perspectives

To what extent do achievement orientations unfold dynamically over long periods of time and across generations? Do families develop distinct “idiocultures” (Fine 1979) surrounding achievement that are key to social class reproduction? Four complementary theoretical perspectives (Conger and Dogan 2007; Schofield et al. 2011; Eccles 2007) guide our analysis. The first emphasizes the child’s response to *contemporaneous* parental guidance and encouragement. The other approaches take a longer temporal perspective by interrogating the parental biography (*proximal past* and *distal past*) and *grandparental* attainments and expectations.

The first, most widely studied perspective on intergenerational influence features *contemporaneous* parental orientations and attainments. Many studies document associations between parental socioeconomic status, parental goals and expectations for children, and children’s achievement-related attitudes and behaviors (Gregg and Washbrook 2011; Hitlin 2006; Kohn, Slomezynski, and Schoenbach 1986). Children of more successful parents receive more parental encouragement and emotional support, their parents have higher expectations for them, and they observe successful role models on a daily basis. Decades of status attainment research document positive effects of parental educational attainment and educational expectations on children’s educational aspirations and plans (Andrew and Hauser 2011; Bozick et al. 2010; Reynolds and Johnson 2011; Warren, Hauser, and Sheridan 2002). High parental educational expectations are also associated with children’s academic performance and attainment (Crosnoe, Mistry, and Elder 2002; Fergusson, Harwood, and Boden 2008; Taylor, Clayton, and Rowley 2004). Moreover, children of more highly educated parents are the targets of substantial investments, including music and dance lessons, academic tutors, summer camp, visits to museums, and computers (Bradley and Corwyn 2002; Fergusson, Harwood, and Boden 2008), which may instill cultural capital (Bourdieu 1986) and promote academic achievement (Chowdry, Crawford, and Goodman 2011). Parents’ “concerted cultivation” is a vehicle for the transmission of “family capital” (Swartz 2008), which could have pervasive consequences for children’s self-concept of ability in academic pursuits and their capacity to navigate in the complex and bureaucratic educational system (Lareau, 2003).

In this first model, parental behavioral and attitudinal “end points” are the focus of attention, e.g., parental child-rearing values, goals for their children, and the quality of parenting (Conger and Dogan 2007; Kohn, Slomezynski, and Schoenbach 1986; Lareau 2003). Accordingly, prior parental orientations and experiences as adolescents (Author 2009; Schoon et al. 2002) and parental achievements in their own pathways to adulthood (Author 2012) would be expected to affect children only indirectly, through their impacts on contemporaneous parental achievements, orientations, and behaviors.

A second approach posits that prior parental pathways also matter for the child's achievement orientations and educational success (McLeod and Shanahan 1993; Strohschein 2005). Parental attainments in the *proximal past* could set in motion dynamics of cumulative advantage and disadvantage with far-reaching implications for child development. Such influence could occur via the child's exposure to parents' attitudes, behaviors, or economic circumstances in prior years (Pears, Capaldi, and Owen 2007), the stable or inconsistent character of parental educational expectations (Bozick et al. 2010), the history of investments in children, and the child's observation of parental models of more or less successful long-term action.

This second approach has been applied to parental economic circumstances across developmental stages of the child's life. Wagmiller et al. (2006), using data from the Panel Study of Income Dynamics (PSID), examined parental poverty from childhood to adolescence. Children suffered the most severe educational disadvantage (lack of high school graduation) at age 25 when parents were persistently poor throughout the study period. Indicating the importance of long-term parental economic circumstances for child cognitive development, Duncan et al. (1998), also using the PSID, showed that parental income during early childhood (birth to age 5) had stronger impacts than during middle childhood (age 6–10) or adolescence (age 11–15) on years of schooling at age 25. In the present study we examine *proximal past* parental influences, including income and unemployment experience during the decade prior to the child survey administration. When parents have histories of floundering and unstable work, children may evaluate themselves and their own prospects more negatively.

A third perspective looks even further back to the parent's *distal past*, to stable orientations and behaviors that could give rise to socio-economic attainments and affect parental goals and child-rearing. Cairns et al. (1998) use the term "intergenerational development" to refer to parallels in behavior and cognition between parents and children at the same developmental stage. Consistently, Taylor, Clayton, and Rowley (2004) hypothesize that parents' own experiences as a student years ago result in "working models of school," including attitudes, values and beliefs, which influence their educational expectations for their children. As a result, "childhood memories are 'reactivated' as parents prepare their own children for similar experiences" (p. 171). This third perspective is rarely assessed empirically due to the absence of data in parent-child studies that precede parental transition to adulthood and adult outcomes. Rarely can "intergenerational development" be assessed through comparison of parents' and children's orientations *at the same ages*.

According to this third "selection model" (Conger, Conger, and Martin 2010; Conger and Dogan 2007; Conger and Donellan 2007; Mayer 1997), parents' stable traits influence both the parents' own socioeconomic attainments as well as their children's attitudes and behaviors. Parental personality thus becomes a critical "3rd variable" driving adult parental achievements and child outcomes directly, and also influencing children indirectly through their positive effects on parental attainments. In one exceptional study (using the NLSY and CNLSY), Duncan and his colleagues (2005) showed continuities in a wide range of psychological orientations and behaviors among parents, measured in adolescence or early adulthood, and their adolescent children. We compare parents' academic self-concepts and

educational plans during their teenage years to those of their children at about the same age and assess mediating linkages---how parental orientations, as adolescents, influence their achievements, their educational expectations for children, and their children's orientations.

While two-generation studies are dominant in research on intergenerational transmission and socioeconomic mobility (Chan and Boliver 2013; Mare 2011), we also investigate a fourth approach to intergenerational influence, the impacts of *grandparents* on grandchildren. The lengthening life span, parental divorce, and remarriage enhance grandparents' involvement in the lives of grandchildren (Bengtson 2001; Bengtson, Biblarz, and Roberts 2002; Bengtson, Putney, and Harris 2013; Ferguson and Ready 2011; Mare 2011). Grandparents provide emotional, "in-kind," and financial support to young families, they serve as role models to grandchildren, they contribute to cross-generational family solidarity and to the maintenance of religious traditions (Bengtson and Harootyan 1994; Bengtson, et al., 2013; King and Elder 1997). Moreover, grandparents' socioeconomic status and orientations may reflect long-term family "idiocultures" of achievement, influencing their children and grandchildren. Drawing on survey data obtained from grandparents during the YDS parents' adolescence, we investigate potential intergenerational parallels in achievement orientations extending through the family lineage.

Earlier status attainment research, based on Wisconsin 1956 high school graduates, finds no significant direct effects of grandparental socioeconomic status on adult grandchildren's educational attainment or occupational status, when controlling parental socioeconomic characteristics (Warren and Hauser 1997). However, also using the Wisconsin data, Jaeger (2012) showed that when families are in need, grandparental education and income do have significant impacts on adult grandchildren's educational attainment. Moreover, findings from the Early Childhood Longitudinal Study-Kindergarten Cohort (surveyed in 1998) indicate that grandchildren of college-educated grandparents have stronger literacy and math skills upon kindergarten entry, with parental education, income, and occupational prestige controlled. This grandparental effect was robust under a stringent propensity score matching specification (Ferguson and Ready 2011). Similarly, Chan and Boliver (2013), based on three British birth cohort studies (born 1946, 1958, and 1970), find that grandchildren's odds of acquiring professional-managerial work (vs. unskilled manual) were 2.5 times higher when grandparents were in the professional-managerial class (vs. unskilled manual), controlling parents' education, income, and wealth. Such grandparental influence could reflect both family capital (Swartz 2008) and a family "idioculture" of achievement (Fine 1979) passed through generations.

We evaluate these four conceptual models with respect to the development of educational plans, the focus of much sociological research, and a less frequently explored self-schema, the academic self-concept.

Educational Plans

The classic status attainment model (Sewell and Hauser 1975, 1980) posits that parents of higher socio-economic status have higher educational goals for their children and encourage them to seek high levels of education. Children's ambitious educational plans promote their

achievement in school and educational attainment, which, in turn, leads to first jobs with higher socioeconomic status and long-term trajectories of occupational and income attainments. Children's educational plans thereby become a powerful mechanism of social class reproduction. We study educational plans rather than aspirations, given the greater realism of plans; educational plans tend to be less inflated than aspirations.

Research extending across several decades has confirmed this status attainment model (Hauser, Tsai, and Sewell 1983; Morgan 2005; Sewell and Hauser 1976; Sewell and Shah 1968). But there is reason to look beyond educational goals in studying contemporary children's psychological orientations surrounding achievement, as these attitudes may not be as determinative of educational attainment as in previous cohorts. Like grade point averages (Woodruff and Ziomek 2004), the educational aspirations and plans of youth have risen greatly in recent cohorts (Chowdry, Crawford, and Goodman 2011; Reynolds and Johnson 2011; Reynolds et al. 2006; Schoon 2010). These orientations are now less closely tied to objective indicators of educational success (e.g., grades and curricular track) than they were previously (Reynolds et al. 2006). Adolescents' educational aspirations and plans continue to predict college enrollment (Eccles, Vida, and Barber 2004) and long-term educational and occupational attainments (Ashby and Schoon 2010; Farkas 2011; Jacob and Linkow 2011; Reynolds and Johnson 2011), but likely incompletely capture adolescents' thinking about themselves in relation to future educational accomplishments.

The Academic Self-Concept

Social psychologists have long recognized the self-concept as a critical determinant of psychological well-being and behavior (Gecas 1982; James 1892; Stryker 1980). The self-concept includes all the manifold ways that individuals view themselves (Rosenberg 1979). However, the lion's share of scholarly attention is directed to global dimensions of the self, especially self-esteem and self-efficacy. Still, scholars recognize self-concept dimensions linked to specific spheres of behavior, roles, and relationships.

According to Bandura (1997), self-concepts of efficacy are domain specific, predicting behaviors in the same domain more effectively than global measures (Grabowski, Call, and Mortimer, 2001). In the educational sphere, children may have positive or negative conceptions of themselves as students, conceiving themselves as having much or little ability to do well in school. The academic self-concept may partially reflect actual ability and achievement (Chowdry, Crawford, and Goodman 2011; Bachman, et al., 1967), as children observe their successes and failures in meeting academic requirements. Consistent with the "specificity matching principle" (Marsh and O'Mara 2008), the academic self-concept has significant positive reciprocal associations with grades in school and educational attainment; in contrast, global self-esteem shows little relationship to these variables (Marsh and Craven 2006; Marsh and O'Mara 2008).

Thus, in addition to formulating educational aspirations and plans, children may develop ideas about themselves that are more or less conducive to educational achievement. Vaisey (2009) theorizes that much behavior is a product of largely "automatic" responses driven by relatively deep-seated orientations, values, and, conceptions of self. The latter self-schema

are of greatest interest here: “our intuitions about ‘the kind of people we are’” (Vaisey 2009, p. 1707), akin to Bourdieu’s (1984) “habitus,” provide much behavioral impetus. Moreover, identity theory posits that individuals strive to act in ways that confirm their self-conceptions of competence and worth; such self-verification enhances self-esteem and well-being (Cast and Burke, 2002). Accordingly, the conception of oneself as high in ability would lead to behaviors that confirm this self-schema, increasing effort in school and seeking opportunities to demonstrate such ability. Similarly, Morgan (2005: 210) focuses on beliefs as determinative of commitment (p. 210). Arguably, beliefs about one’s competence in the academic realm contribute substantially to the “ease” with which achievement of academic goals is anticipated and attained. Academic self-efficacy is found to be positively related to high school students’ academic goal setting and achievement (Bandura, et al., 1996).

Class-stratified self-schemas may be inculcated at an early age such that some children have stronger dispositions to succeed academically. Especially in societies like the United States, which place greater importance on ability than effort or hard work (effort is more salient in Japan and other East Asian societies), children who view themselves as having a high level of ability to succeed academically may be inclined to take advantage of opportunities to demonstrate their competence. In contrast, those who do not view themselves as “good” in academic pursuits may “tune out,” thinking that school is not a domain in which they will be able to achieve. Dislike of school, educational disengagement, and deterioration in performance might follow.

Evidence supports these conjectures. Gregg and Washbrook’s (2011) research on almost 8,000 UK children found that the child’s self-concept of ability (called “scholastic competence”) at ages 8–9 predicted a composite measure of achievement (English, math, and science) at age 11, with age 7 achievement controlled. A similar British study of more than 13,000 children (Chowdry, Crawford, and Goodman 2011) found strong associations between age 14 ability beliefs (self-evaluation of being good in math, English, science and ICT) and age 16 achievement, controlling age 11 achievement.

This domain-specific element of the self-concept is likely reflective of ability and many experiences, including actual school achievement, teachers’ reflected appraisals, and children’s comparisons of their own academic accomplishments with others. However, aside from its relationship to academic ability and performance, little is known about the sources of this dimension of the self-image. Given the centrality of parental influence in the early years of a child’s life when the most basic orientations toward the self are formed, it is plausible to expect that parents, and perhaps even grandparents, transmit this potential component of “family capital” (Swartz, 2008).

In sum, this study investigates four sources of intergenerational influence on adolescent achievement orientations: *contemporaneous* influences, *proximal* past parental trajectories, *distal* precursors extending back to the parent’s own adolescent years, and *grandparental* influences. Our general conceptual model, moving from grandparents, to parents, to grandchildren, is shown in Figure 1. Four research questions guide our analysis: First, do *contemporaneous* parental influences on children’s achievement orientations in each generational pair mirror the findings of prior status attainment studies? Second, do *proximal*

past parental trajectories, their attainments through the transition to adulthood (income, unemployment), influence parents' expectations for their children and children's achievement orientations? Third, we interrogate *distal past* precursors: how do parental orientations, as adolescents, influence their own achievements, their educational expectations for their children, and their children's achievement orientations? Finally, we ask how do *grandparental* attainments and views affect processes of achievement across generations?

While this study is clearly lodged in the status attainment tradition, it elaborates the classic status attainment model in two ways: first, by examining a relatively understudied achievement orientation, the academic self-concept (in addition to more commonly addressed educational plans); second, by investigating the long-term processes through which parental educational expectations for their children and children's achievement orientations develop, extending back to the parents' adolescence and across generations. We now turn to the data.

Data Source

We utilize data from three generations of respondents—grandparents (G1), parents (G2), and grandchildren (G3)—in the Youth Development Study (Author 2012). This study began in the 1987–88 academic year when a panel of 1,139 teenagers (G2, the second generation) was randomly selected from a list of 9th graders attending the St. Paul Minnesota Public Schools. This panel was predominantly white (65%), with the largest minority groups Hmong (11%) and African-American (9%), reflecting the composition of the St. Paul Public Schools. Socioeconomic indicators for the city of St. Paul and the nation as a whole, as documented by the 1990 Census, are quite comparable (Author, 2003). While the panel's socio-economic composition mirrored the community, because private and parochial school children were not included it probably underrepresents higher income families (median household income was between \$30,000 and \$39,000 in 1987 dollars). The percent of single parent families (23%) was the same as in the St. Paul community at large.

At the first survey in Spring 1988, most participants (G2) were 14 or 15 years old. These young people completed surveys near-annually, first administered in high school classrooms and subsequently by mail, through 2011, when they were 37 and 38 years old. Panel retention in recent years, at about 67 percent of the original cohort, is not associated with numerous indicators of socio-economic origin, adolescent achievement-related orientations, extrinsic and intrinsic work values, behavioral problems and mental health. However, men, non-whites, and youth whose parents were not employed at the onset of the study had higher risk of survey attrition.

We surveyed the parents (G1) of this cohort in the first and fourth waves of the study, when their children (G2) were in the first and last years of high school (1988 and 1991). The G1 surveys obtained information about socioeconomic standing and educational expectations for G2.

In 2008, we began to recruit children of the G2 panel who were age 11 and older (Author 2011). The first data collection (a mailed survey) from these children (G3) occurred in 2009, with 277 responding. We continued recruiting children for the second and third waves of the G3 child study (including those who turned 11, as well as older children who had not enrolled previously). By 2011, 67% of the eligible parents had allowed their children to participate and 422 children had completed at least one of three surveys. In the analyses presented here, we include achievement orientation data from the G3 2011 survey; when that data was not available, we substituted measures from 2010 or 2009 surveys. The G3 children's data thus derive from the most recent survey (82% of G3 orientations were measured in 2011).

Matching G1, G2, and G3 generations yielded 422 triads, based on data obtained from 265 families (with multiple G3 children in the same family). Because data from both parents was used in calculating G1 parental education and household income, a total of 1041 G1, G2, and G3 individual respondents contributed to the analysis. By virtue of the study design, this subsample of YDS participants is of lower socioeconomic status than the panel at large because it over represents relatively early G2 child-bearers; for example, parents of G3 children of median age, 15, were 20 and 21 at the time of the child's birth. Just 21% of consenting parents had a 4-year college degree, in comparison to almost 35% of the full YDS panel.

Measures

Adolescent Educational Plans

Both G2 (age 15–16 in 1989) and G3 (mean age 15.8 at the most recently completed survey) were asked, “What is the highest level of education that you plan to obtain in the future?” Responses were coded from less than high school (1) to Ph.D. or professional degree (6). The category “don't know” was considered missing.

Adolescent Academic self-concept

In G2 and G3 generations, three questions measured the adolescent's academic self-concept: (1) “The next question is about *intelligence*—having a quick mind, catching on to things fast. How intelligent do you think you are, compared with others your age?”; (2) “How good a reader do you think you are, compared with others your age?”; and (3) “How would you rate yourself in school ability?” For each, response options ranged from 1 (far above average) to 5 (far below average); responses were reverse coded so that higher scores indicate a stronger academic self-concept.

In the Youth in Transition Study (Bachman et al. 1967), this measure was positively related to two intelligence tests ($r=.24$, $r=.44$), a vocabulary test ($r=.51$), an arithmetic reasoning test ($r=.51$), and a reading comprehension test ($r=.40$). It is similar to others that attempt to capture the child's conception of self as a student (Harter 1982; Gregg and Washbrook 2011; Chowdry, Crawford, and Goodman 2011). In the structural equation model, the academic self-concept is represented by latent constructs for G2 and G3.¹ The correlation between the

academic self concept and educational plans was .47 ($p < .001$) for G2 and .32 ($p < .001$) for G3.

Educational Attainment

Grandparental and parental educational attainment was measured on an ordinal scale, from (1) elementary or junior high school to (6) Ph.D or professional degree. The G1 measure was obtained in W1, 1988, when the G2 respondents were in the ninth grade. If two G1 parents in a family participated in the YDS, the higher educational attainment was used. The G2 measure was obtained in 2009, when the respondents were 35–36 years old. Questions differed slightly to accommodate change in common terminology (e.g., a G1 response option was “community or junior college degree”; a G2 option was “Associate Degree”).

Household Income

In 1988, G1 respondents were asked, “What was your total household income in 1987 before taxes? Include wages and salaries, net income from business or farm, child support, dividends, interest, rent, and any other money income received by persons in your household.” Thirteen categories ranged from under \$5,000 to \$100,000 or more. We logged the mid-point of each category.

G2 average income is based on the question, “What was the income for your entire household in [previous year], before taxes? (Include all earners in your household.)” Since G2 respondents wrote in their incomes, their reports are continuous. G2 average log incomes were computed across 8 waves of data collection (1999 to 2009). To take inflation into account, all incomes were converted to 2008 equivalents. This measure captures the period from 1998 to 2008, approximately the decade since the younger G3 children were born. Since it is an average across available years, missing data is negligible.

Unemployment Experience

Based on annual Life History Calendars that registered a series of activities monthly, the average months of G2 unemployment (not employed and looking for work) per year were calculated across the years of 1998–2008.

Parental Educational Expectations

G1 parents’ expectations for G2 (in 1988, when the G2 children were age 14–15), and G2 parents’ expectation for each G3 (in 2011, when the G2 parents were age 37–38) were gauged by the identical question, “What level of education do you think your child will eventually complete?” Responses ranged from (1) less than high school graduation to (8) Ph.D. or professional degree. In G1, the higher educational expectation was used if two parents’ expectations were available.

¹All three indicators have significant and substantial associations with the latent academic self-concept constructs, with lambdas of approximately equivalent magnitude in G2 and G3 (see Figure 2).

Controls

Given the importance of gender for ability beliefs and attainments (Correll 2001; Mello 2008), gender of the child is controlled. Because achievement orientations vary by age (Mello 2008), G3 child age is controlled in estimating G2 parental expectations for their G3 children and G3 achievement orientations. G2 age is not controlled since it is virtually the same at all data points (since the panel originated in a 9th grade school class). Race (white/nonwhite) and G3 child age were included in a series of sensitivity analyses. Descriptive information for the measures is presented in Table 1. A correlation matrix for all variables is shown in Table 2.

Analytic Strategy

To examine transmission of achievement orientations across generations, we estimated a fully recursive structural equation model (Muthén and Muthén 2010) with Mplus, based on 422 G1, G2, G3 triads. This approach allows for prior variables to have direct and/or indirect effects on adolescent achievement orientations (G3), consistent with the four theoretical perspectives on intergenerational influence. In this model (see Figure 2) influence flows temporally from grandparental variables (G1), to parental variables (G2) measured from age 15–16 through age 37–38, to child (G3) variables measured at mean age 15.8. Included are G1 education and income, G1 educational expectation for G2 (when G2 children were age 14–15); G2 educational plans (at age 15–16), academic self-concept (age 15–16), average income and average unemployment (from age 24–25 to 34–35), educational attainment (age 35–36), and educational expectation for G3 (G2 age 37–38); and the final outcomes, G3 educational plans and academic self-concept (G3 mean age 15.8). Associations between constructs measured at about the same time are expressed by residual correlations.² Because G2 may have completed their educations at various times, no causal paths are specified between educational attainment and income and unemployment histories (which draw on information across many years); their associations are also expressed by residual correlations. To simplify Figure 2, only statistically significant paths ($p < .05$) are shown.³ However, Table 3 reports all path coefficients.

We used multiple imputation (Rubin 1976, 1987; Little and Rubin 2002) to impute missing data for all variables.⁴ Measurement parameters for the two latent academic self-concept constructs are calculated simultaneously with the causal parameters in a full information model. Given likely similarities in educational plans and academic self-concept among G3 children in the same family, standard errors are adjusted for the clustering of children in families. Because family processes surrounding achievement may differ by race (Morgan 2005) and child age, the final model was re-estimated for two subgroups: whites only and G3 children younger than age 19. Since the parameters of these models were almost identical to those for the full sample, these subgroup models are not shown.

²In an exception to this strategy, our model includes paths among the three G1 variables, all measured in 1988.

³As noted in Figure 2, exogenous controls for G2 gender and G3 gender and age were estimated but not shown.

⁴Most measures had less than 5% of cases missing, though the range was 0 to 14%.

Findings

In Figure 2 paths depict the statistically significant interrelations of socioeconomic attainments, parental educational expectations for children, and adolescents' achievement orientations across generations. With an RMSEA less than .05 (.042) and CFI greater than .9 (.95), the overall model fits the data well (MacCallum, Browne, and Sugawara 1996; Steiger 1990).

Investigating our first research question, we observe *contemporaneous* parental influences on children across generations 1 and 2, as well as across generations 2 and 3. Consistent with voluminous research in the status attainment tradition, parental educational attainment in the first generation has a positive effect on educational expectations for children (.43, $p < 0.001$), which in turn influences the children's own educational plans (.51, $p < 0.001$). Thus, parental educational attainment has a significant indirect effect on children's educational plans through parental expectations. (The indirect effect is .16, $p < .001$; indirect effects are not reported in Figure 2, though all indirect effects mentioned are significant at $p < .05$ or less.)

We see a similar pattern of contemporaneous influence in the second and third generations. Parental educational attainment in the second generation has a positive effect on their educational expectations for their children (.27, $p < 0.001$), which influences the children's educational plans (.28, $p < 0.001$). Again parental educational attainment has an indirect effect on children's educational plans, but as before, no direct influence. The magnitude of the standardized path coefficient, representing the effect of parental educational attainment on educational expectations for the child, weakens from the first to the second generation (from .43, $p < 0.001$, for G1, to .27, $p < 0.001$ for G2; the difference in coefficients is significant, $p < .05$). Similarly, the effect of parental educational expectation for the child on the child's educational plans dissipates from the first to the second generation (from .51, $p < .001$ to .28, $p < .001$; the difference in coefficients is also significant, $p < .01$). As educational expectations for children have inflated, they may have become somewhat detached from the parents' own educational accomplishment and less influential for the next generation.

A very similar pattern is apparent with respect to the academic self-concept. Parental education in the first generation influences children only indirectly. That is, G1 parental educational attainment affects parents' educational expectations for their children (.43, $p < 0.001$), which in turn influences their children's academic self-concept (.42, $p < 0.001$). Testifying to the continued importance of parental educational attainment and expectations, parental educational attainment in the second generation influences parental educational expectations for their children in the third generation (.27, $p < 0.001$), which, in turn, influences the children's academic self-concept (.25, $p < 0.001$).⁵

Turning to our second research question, implicating the parental *proximal past* biography (G2), we examine whether the parent's prior income and unemployment (from age 24–25 to age 34–35) influence parental educational expectations for the child, measured when the

⁵Models (not shown, available upon request) show that parental expectations in each generation significantly predicted children's future outlooks even when children's self-reported grades in school (also a significant predictor of each orientation) were controlled.

parents were 37–38 years old. However, neither of these variables had significant impacts on parental expectations for their children or their children's own achievement orientations.

Our third research question examines “intergenerational influence” from the parental *distal past*, that is, “selection processes” through which early psychological orientations influence parental achievements, their expectations for their children, and children's achievement orientations. Do long-term stable parental attributes, measured during adolescence, influence children's orientations? Despite the more than 20-year interval between parental and child measurements, each occurring during adolescence, we find a direct path between parental (G2) and children's (G3) academic self-concepts (.25, $p < 0.01$). This long-term effect is also quite remarkable because parental educational expectations for the G3 child, the only contemporaneous influence on the G3 academic self-concept, is controlled. No direct path is observed between adolescent educational plans across generations.

We also find a series of indirect influences on third generation children flowing from their parents' achievement orientations in adolescence. We observe a direct pathway from the parental academic self-concept, measured during adolescence, to parental expectations for their children more than two decades later (.16, $p < .05$), which, as we have seen, affect the children's own educational plans and academic self-concepts. A second indirect influence of the parental academic self-concept flows through parental educational attainment (.32, $p < 0.001$), which also has a positive effect on parental educational expectations, thereby affecting the third generation children's achievement orientations.

Parental educational plans in adolescence affect children's educational plans and academic self-concept via parental educational attainment (.17, $p < 0.05$) and educational expectations for their children. Despite the overriding interest in educational goals (plans and aspirations) in the status attainment literature, the academic self-concept in adolescence is found to have a stronger impact on parental educational attainment than adolescent educational plans (.32, $p < 0.001$, vs. .17, $p < 0.01$, respectively; the difference in coefficients is significant at the .01 level).

Our fourth research question addresses *grandparental* influence. We observe a significant direct path from G1 educational attainment to G3 educational plans (.13, $p < .05$), which occurs net of the other G2 influences. Moreover, grandparents exert indirect effects on their grandchildren's educational plans and academic self-concept through several pathways. Thus, grandparental education sets in motion a series of cascading effects that run through grandparents' expectations for their adolescent children; their children's educational plans, academic self-concepts, educational attainments, and expectations for their own children; and finally, to the grandchildren's orientations. We also find a significant direct path from grandparent household income years earlier to parental educational expectations for the grandchildren (.15, $p < 0.01$); this effect occurs net of the parental academic self-concept during high school and parental educational attainment. It is reasonable to suppose that grandparental higher incomes (and perhaps greater wealth, though the YDS collected no information about G1 wealth) might lead grandparents to invest in the higher education of grandchildren, fostering higher parental educational expectations for them (Chan and Boliver 2013).

Discussion

We have observed the playing out of achievement through almost a quarter of a century across three generations. In addressing our first research question, we found strong support for the *contemporaneous* perspective on parental influence, and particularly for the status attainment model. This is especially remarkable given the many societal changes occurring during the past quarter century (Bengtson, et al. 2013), many affecting young people, such as increasing educational expectations and attainments and the rise of social med. Despite generational shifts in parental educational attainment, educational expectations for children, children's educational plans for themselves, and dramatic changes in the society, in the economy, in technology, and the culture at large, we find a very similar pattern of influence across two generational dyads (G1 to G2, and G2 to G3). The educational attainment of each parental generation had positive effects on expectations for their children, which, in turn, had significant positive impacts on children's achievement orientations. But we also extend the status attainment model in two important ways. First, we consider the academic self-concept as a social psychological precursor of achievement. Second, we examine long-term precursors of parental expectations for their children that implicate a familial educational culture transmitted across generations.

As noted earlier, status attainment researchers have focused on educational goals (aspirations and plans) despite evidence that domain-specific conceptions of ability importantly influence attainments. The positive effects of parental education and educational expectations on children's educational goals have been replicated in many studies (Andrew and Hauser 2011; Bozick et al. 2010; Morgan 2005; Reynolds and Johnson 2011; Warren, Hauser, and Sheridan 2002). The present research indicates that parents also influence their children's sense of themselves as capable actors in the educational realm. This dimension of the family idioculture---ideas surrounding "the kind of people we are" (Vaisey 2009), as smart and good in school, extends across generations. Parental educational expectations, observed across two generational pairings (G1-G2 and G2-G3) affected the adolescent's self-concept of ability, the youth's confidence, or lack thereof, of being successful in this domain. The sense of confidence in one's academic ability also predicted parental educational attainment, as the second generation youth apparently sought to verify their self-concepts in the educational realm (Cast and Burke, 2002). In fact, in the second generation self-concept of ability was a more powerful predictor of educational attainment than educational plans.

But we also extend the status attainment model through our investigations of long-term influences (research questions 2-4). In addressing our second research question, we found that the biographical variables under consideration, proximal income and parental unemployment experience observed over a decade, affected G3 children neither directly nor indirectly. Apparently, children are resilient in maintaining their achievement orientations despite instability of parental employment and low average incomes.

Our third research question interrogated *distal* processes of "selection," through which seemingly stable individual differences influence parental achievements, attitudes toward their children, and parenting behaviors. Extending the analysis to the G2 parent's teenage

years, we find support for “intergenerational development” (Cairns et al. 1998), that is, intergenerational continuity in attitudes and behaviors at the same age (see also Taylor, Clayton, and Rowley 2004). The parent’s self-concept of ability, measured during adolescence, influenced their children’s academic self-concepts directly more than twenty years later. Moreover, while we have conceptualized educational attainment as a contemporaneous influence, this variable represents the culmination of a long process of biographical experience, implicating early achievement-oriented attitudes and eventuating in educational degrees. In fact, whatever biographical elements enhance or detract from educational attainment will, via parental expectations and behaviors, thereby influence children.

Finally, our fourth research question draws attention to *grandparents*. We observe the long-term influence of grandparents on children’s emerging achievement orientations, operating through direct and indirect pathways. G1 educational attainment had a direct positive influence on G3 educational plans. The findings also indicate that the material well-being of grandparents affects the academic prospects of the third generation by heightening the second generation parents’ educational expectations for their children. These direct paths, coupled with the several indirect pathways through which grandparent education exerts its effects on the third generation, suggest that grandparents are indeed consequential for the achievement orientations of their grandchildren (Chan and Boliver 2013).

We have thus identified precursors of parental expectations for their children, experienced much earlier in life. These included their own parents’ expectations for them, their achievement-related attitudes as adolescents, and their grandparents’ attainments. A familial culture emphasizing high parental educational expectations, optimistic educational plans, and academic self-confidence may be important components of “family capital” (Swartz 2008; Author 2011) that contribute to social class reproduction across generations. Concern about the quality of schools, teachers, and other educational experiences, helping with homework, enforcing homework times, and assisting children who are falling behind while it is still possible to recover, may become parts of the “family idioculture,” observed by children and repeated across generations. Somewhat surprisingly, the more *distal* attitudinal indicators of this family culture (parental academic self-concepts and educational plans, measured in adolescence,) assumed greater significance for children’s orientations than the more *proximal parental biography*, including employment and economic attainments.

Each generation thus provides the environmental milieu for the development of the next generation, with potential for spiraling advantage or disadvantage over time (Elder, Caspi, and Downey, 1986). Our analysis suggests both virtuous and vicious spirals—the socioeconomic, and especially educational, accomplishments of parents give rise to the expectations that they have for their children, which support children’s achievement orientations and attainments in the next generation. Conversely, lower parental expectations for their children may set in motion developmental processes that are inimical to attainment. Differential orientations to achievement and their behavioral expression add to the many other subjective indicators of well-being that differentiate socioeconomic classes in the United States (Hout, 2003).

It should be noted that the very design of the YDS gives rise to notable shortcomings. We have data from just one parent of G3, the participant in our long-term panel study; both parents' expectations and experiences influence adolescent children. The structure of relationships depicted in Figure 2 constitutes a skeletal and oversimplified framework for understanding the complex processes of intergenerational attainment. For example, parental expectations may both affect and reflect children's achievement orientations (Zhang, et al., 2011). Given data limitations, we cannot adjust for cognitive ability, which could account for some intergenerational continuity. Educational orientations are also responsive to extra-familial influences, including peer attitudes and widespread cultural beliefs about which groups are more or less capable in the academic realm (Morgan 2005).

Still, the value of our three-generation longitudinal study design is substantial. Parallel data extending across three generations is rare for obvious reasons. It takes many years, considerable resources, and long-term commitment on the part of investigators, funders, and research subjects to acquire such data. Unlike many studies, we do not have to rely on subjects' retrospective accounts of their earlier orientations and behaviors. We are able to represent the parental biography of achievement through prospective measures obtained through the transition to adulthood, and quite proximal measures of contemporaneous achievements and orientations. The fact that survey data was obtained from all three generations also represents a considerable advantage over study designs that rely on surveys of one generation about the socioeconomic accomplishments of others. Importantly, single generation designs cannot address the "soft" characteristics, like educational expectations and self-conceptions of ability, which may be transferred inter-generationally (Jaeger 2012).

While our third generation respondents are too young to assess their own educational attainments, we speculate that the academic self-concept may take on even more importance for the attainment process in this generation. As educational plans have risen since the late 1980s when their parents were adolescents, they have also become less tied to objective indicators of achievement (Reynolds et al. 2006). A fuller understanding of the formation of achievement orientations and social class reproduction across the three generations of Youth Development Study participants awaits further data collection from the G2 generation as they progress in their work careers and as members of the G3 generation make their own transitions from school to work.

In conclusion, this study confirms that children's achievement orientations reflect contemporaneous parental influence. However, extending the status attainment model, we draw attention to the self-concept of ability as an important element of the social psychological process of attainment. We also find that adolescents' achievement orientations can be traced to distal precursors in their parents' lives and to grandparental influence measured more than 20 years earlier. The formation of children's achievement orientations appears to be responsive to direct and indirect influences stemming from parental expectations for the child, from parents' own long-term achievement orientations expressed during their adolescent years, and from the success of the grandparent generation.

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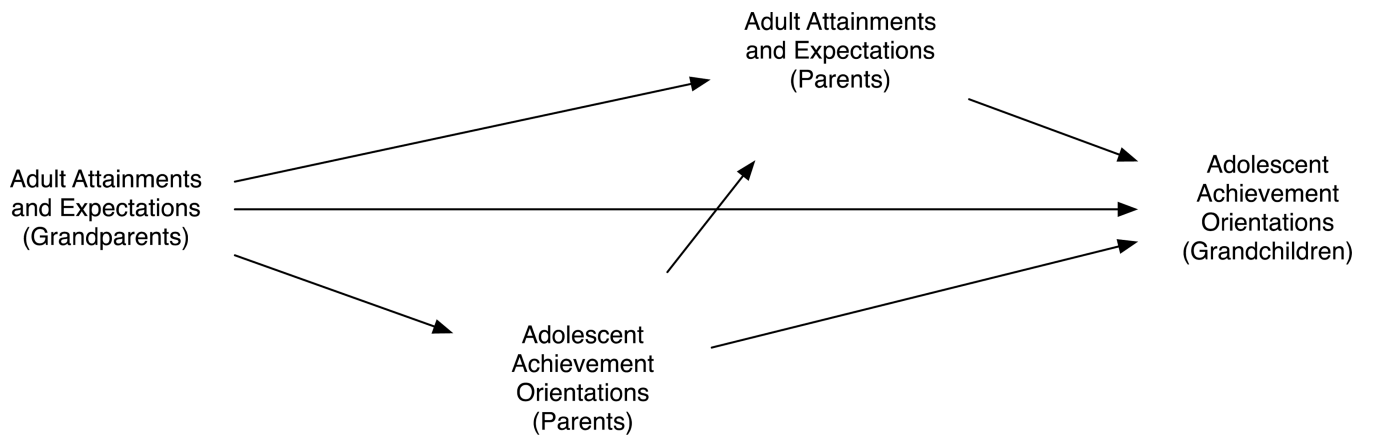


Figure 1.
Simplified Conceptual Model of the Intergenerational Achievement Process

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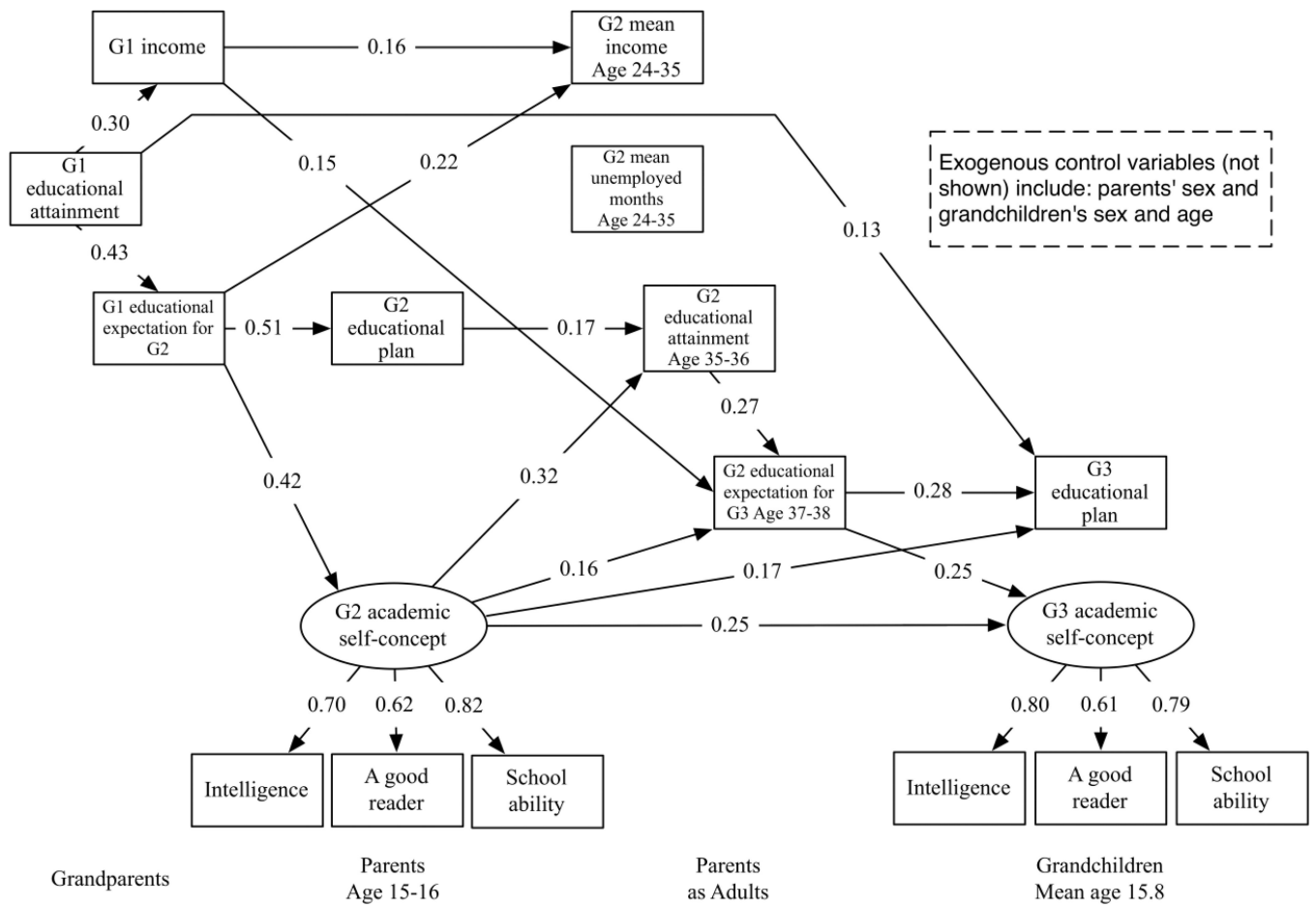


Figure 2.
Structural Equation Model of the Intergenerational Achievement Process

Table 1

Descriptive Statistics of Imputed Data

Variable	Year assessed	Mean	S.D.	Range
G1 Grandparents (N=265)				
Household income	1988	10.639	0.784	8.414 – 12.119
Educational attainment	1988	2.698	1.008	1 – 6
Educational expectations for their child	1988	3.889	1.746	1 – 8
G2 Parents as Adolescents (N=265)				
Educational plans	1989	3.545	1.308	1 – 6
Academic self-concept	1989			
<i>Intelligence</i>		3.436	0.748	1 – 5
<i>A good reader</i>		3.467	0.869	1 – 5
<i>School ability</i>		3.303	0.680	1 – 5
Sex (male = 1)	1988	0.254	----	0 – 1
Race (white =1)	1988	0.665	----	0 – 1
G2 Parents as Adults (N=265)				
Educational attainment	2009	2.852	0.944	1 – 5
Ln mean income 1998–2008 2008 dollars	1998–2008	10.664	0.671	7.915 – 12.413
Mean unemployed months 1998–2008	1998–2008	0.747	1.456	0 – 8.091
Educational expectations for their child	2011	4.659	1.642	1 – 8
G3 Children as Adolescents (N=422)				
Educational plan	2011 ^a	4.458	1.235	1 – 6
Academic self-concept	2011 ^a			
<i>Intelligence</i>		3.538	0.775	1 – 5
<i>A good reader</i>		3.599	0.915	1 – 5
<i>School ability</i>		3.480	0.766	1 – 5
Sex (male=1)	2011 ^a	0.467	----	0 – 1
Age at last available survey	2011 ^a	15.827	2.726	11 – 23

^aWhen a 2011 measure was not available for the adolescent, measures in 2010 or 2009 were substituted.

Table 2

Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
G1 Grandparents																	
1 Household income	1																
2 Educational attainment	0.300	***	1														
3 Educational expectations for the child	0.235	***	0.459	***	1												
G2 Parents as Adolescents																	
4 Educational plans Academic self-concept	0.054	0.127	*	0.454	***	1											
5 <i>Intelligence</i>	-0.017	0.064	0.233	***	0.266	***	1										
6 <i>A good reader</i>	0.017	-0.013	0.227	***	0.346	***	0.485	***	1								
7 <i>School ability</i>	0.082	0.111	0.326	***	0.456	***	0.570	***	0.478	***	1						
8 Sex (male = 1)	-0.013	-0.071	0.048	-0.04	0.054	-0.069	0.084	1									
G2 Parents as Adults																	
9 Educational attainment	0.088	0.220	***	0.366	***	0.260	***	0.411	***	-0.04	1						
10 Ln mean income 1998-2008	0.209	***	0.112	*	0.294	***	0.134	***	0.044	0.229	***	0.272	***	1			
11 Mean unemployed months 1998-2008	-0.06	-0.034	-0.169	**	-0.155	**	-0.023	-0.157	**	-0.054	-0.224	***	-0.504	***	1		
12 Educational expectations for the child	0.225	***	0.207	***	0.214	***	0.191	***	0.225	***	0.167	***	0.228	***	0.088	0.364	***
																	1
G3 Children as Adolescents																	
13 Educational plans Academic self-concept	0.021	0.132	*	0.074	0.05	0.193	***	0.173	***	0.148	***	0.179	***	0.091	*	-0.104	*
14 <i>Intelligence</i>	0.093	0.038	0.023	0.043	0.178	***	0.113	*	0.094	*	-0.043	0.095	*	0.018		-0.073	0.185
15 <i>A good reader</i>	0.061	0.068	0.046	0.03	0.222	***	0.141	**	0.106	*	-0.011	0.103	*	0.019		-0.103	0.191
16 <i>School ability</i>	0.089	-0.002	0.054	0.051	0.229	***	0.119	*	0.163	***	0.068	0.173	***	0.074		-0.083	0.287
17 Sex (male = 1)	-0.034	0.032	0.007	0.022	0.058	0.028	0.093	-0.109	*	0.059	0.039	0.012	-0.155	**	-0.173	0.058	0.632
18 Age at last available survey	-0.166	***	-0.132	*	-0.132	**	-0.129	*	-0.195	***	-0.129	**	-0.184	***	-0.189	***	0.010
																	0.012

* p<0.05,
** p<0.01,
*** p<0.001

Table 3

A Standardized Path Coefficients

To	Predicting G1 and G2 Variables		Predicting G3 Variables		Coef.
	From	Coef.	To	From	
G1 income	G1 educational attainment	0.300***	G3 academic	G2 academic self-concept	0.250**
G1 educational expectation for G2	G1 educational attainment	0.433***	self-concept	G2 edu. exp. for G3	0.251***
G2 academic self-concept	G1 income	0.107		G1 edu. exp. for G2	-0.050
	G2 sex (male = 1)	0.080		G1 income	0.084
G2 educational plan	G1 edu. exp. for G2	0.419***		G1 educational attainment	-0.027
	G1 income	-0.018		G2 educational plan	-0.104
G2 educational attainment	G1 educational attainment	-0.087		G2 educational attainment	0.024
	G2 sex (male = 1)	0.033		G2 mean income	-0.094
G2 educational expectation for G3	G1 edu. exp. for G2	0.513***		G2 mean unemployed months	-0.098
	G1 income	-0.037		G2 sex (male = 1)	-0.001
G2 academic self-concept	G1 educational attainment	-0.103		G3 sex (male = 1)	0.046
	G2 sex (male = 1)	-0.072		G3 age	0.017
G2 educational attainment	G2 academic self-concept	0.161*	G3 educational plan	G2 academic self-concept	0.171*
	G2 educational attainment	0.270***		G1 educational attainment	0.127*
G2 mean income	G1 income	0.148**		G2 edu. exp. for G3	0.279***
	G2 mean income	0.032		G2 mean income	-0.043
G2 mean unemployed months	G2 mean unemployed months	0.008		G2 mean unemployed months	-0.060
	G2 educational plan	0.000		G2 educational attainment	0.042
G1 educational attainment	G1 edu. exp. for G2	-0.065		G2 educational plan	-0.082
	G1 educational attainment	0.113		G1 edu. exp. for G2	-0.096
G2 sex (male = 1)	G2 sex (male = 1)	0.057		G1 income	-0.083
	G3 sex (male = 1)	-0.175***		G2 sex (male = 1)	0.095
G2 academic self-concept	G3 age	-0.093		G3 sex (male = 1)	-0.133**
	G2 academic self-concept	0.320***		G3 age	-0.113*
G2 educational plan	G2 educational plan	0.173*			

A Standardized Path Coefficients			
Predicting G1 and G2 Variables		Predicting G3 Variables	
To	From	Coef.	From
	G1 educational attainment	0.108	
	G1 income	0.000	
	G1 edu. exp. for G2	0.120	
	G2 sex (male = 1)	-0.050	
G2 mean income	G1 income	0.164**	
	G1 edu. exp. for G2	0.217*	
	G2 academic self-concept	0.158	
	G2 educational plan	-0.040	
	G1 educational attainment	-0.030	
	G2 sex (male = 1)	0.239***	
G2 mean unemployed months	G2 academic self-concept	-0.124	
	G2 educational plan	0.002	
	G1 edu. exp. for G2	-0.135	
	G1 income	-0.037	
	G1 educational attainment	0.048	
	G2 sex (male = 1)	-0.038	

B Latent Constructs, Correlated Errors, and Model Fit Statistics

Latent constructs	Indicators	Coef.	Correlated errors between	Coef.	
G2 academic self-concept	Intelligence	0.702***	G2 academic self-concept	G2 educational plan	0.410***
	A good reader	0.616***	G3 academic self-concept	G3 educational plan	0.221***
	School ability	0.816***	G2 mean income	G2 mean unemployed months	-0.481***
G3 academic self-concept	Intelligence	0.798***	G2 educational attainment	G2 educational attainment	0.181*
	A good reader	0.613***	G2 mean unemployed months	G2 educational attainment	-0.154*
	School ability	0.793***			
Model Fit Information					
	RMSEA	0.042			
	CFI	0.953			

1000.0 < p

'10.0 < p
**
'5.05 < p
*

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