Capital for College: Parental Assets and Postsecondary Schooling

Dalton Conley
New York University

This article argues that traditional models of educational attainment have neglected a substantial portion of the economic resources available to parents to facilitate their children's success in schooling: wealth. In multigenerational analyses of the Panel Study of Income Dynamics, it demonstrates that parental wealth, as measured by net worth, has a strong, nonlinear effect on the postsecondary schooling of offspring—net of income and other measures of socioeconomic background. Logistic regression models show that parental wealth is a strong predictor of enrollment in college and may affect the completion of college (attaining a bachelor's degree) but is not significant for the transition to graduate school. A comparison of models in which wealth is converted into an income stream and then added to annual income and models in which the effects of parental income and net worth are estimated separately indicates that wealth has properties that are analytically distinct from income.

Ever since Blau and Duncan (1967) concluded that the impact of family background on socioeconomic status works largely through the schooling system, educational attainment has been one of the most studied outcomes in stratification research. The impact of family background on educational attainment—as measured by degree completed or years of formal schooling—has been investigated in a variety of contexts. First, researchers have elaborated on Blau and Duncan's original work by expanding on the measurement of family background to include such measures as parental encouragement and peer influences (Hauser and Daymont 1977; Sewell and Hauser 1975). Second, researchers have modeled a number of intervening variables that mediate the impact of family background on educational outcomes; these factors include IQ (Jencks et al. 1972, 1979) home environment (Gottfried 1984), income (Hill and Duncan 1987), educational aspirations and expectations, and a host of social-psychological measures (Jencks et al. 1972, 1979). Latent variable approaches have also been used to determine the impact of both measured and unmeasured family background on educational progress (Hauser and Mossel 1985; Hauser and Sewell 1986; Hauser and Wong 1989; Kuo and Hauser 1995).

Third, scholars have used new methods to factor out family background effects to focus on the marginal returns to economic inputs, such as income in various forms, on the education and other outcomes of children (see, for example, Duncan, Yeung, Brooks-Gunn, and Smith 1998; Mayer

1997). Specifically, a handful of studies have used within-family comparisons or instrumental variable approaches to determine the "true" effect of income. For instance, by comparing the income received from various sources, Mayer found a much smaller effect of economic resources on children's outcomes than had been previously estimated. Duncan et al. (1998) compared siblings to determine the marginal effect of income differences over the course of their childhood on educational attainment. They found a significant effect for income from birth to age 5, in contrast to previous studies that posited that income during adolescence is the most important.

By focusing on parental income, the status attainment and human capital paradigms may have missed a more important economic determinant of families' level of well being: household wealth.[1] There is adequate reason to suspect that the impact of the distribution of wealth is not limited to elites. There has been a sharp decline in the concentration of wealth in the United States since the 1920s; in 1929, the top 1 percent owned a high of 44 percent of the country's total wealth, whereas in 1976, the top 1 percent owned only 19.9 percent, the century's low. This figure climbed again to 35.7 percent in 1989 and dropped slightly by 1992 (Wolff 1996: 78–79).[2] The distribution of wealth is still more far more unequal than the distribution of income (Wolff 1996), but the decline in the concentration of property during the 20th century means that the modal American family now has at least some wealth at its disposal (Spilerman, Lewin-Epstein, and Semyonov 1993). In fact, the median net worth of American families in 1992 was $43,235, whereas the mean was $213,329 (Wolff 1996).

Wealth has been well studied as an intergenerational phenomenon, and economic research on the role of family transfers in the distribution of wealth has revealed a higher intergenerational correlation than for income. Kotlikoff and Summers (1981) estimated that up to 80 percent of capital accumulation can be attributed to intergenerational transfers.[3] Such a figure paints quite a different picture of intergenerational socioeconomic mobility than do educational, income, or occupational data (see also Western and Wright 1994). However, studies of wealth have been limited to the transmission of assets across generations and have not examined how the distribution of wealth influences life chances in other realms, including educational success. That said, the changing distribution of wealth in the United States may interact with the way schooling is financed (by local property taxes) and with the rising costs of postsecondary education to yield a situation in which wealth—not income—is the more important economic resource in predicting the educational success of offspring. Aside from direct financial considerations, there are many other reasons to suspect that levels of parental wealth should play an important role in predicting the educational attainment-achievement of offspring. These causal pathways range from the quality of neighborhoods to parents' ability to provide extracurricular advantages, such as computers or tutoring, to the sense of educational entitlement and security that parental assets may foster (for a full discussion of all these mechanisms, see Conley 1996, 1999).

In this article, I examine an area in which previous research has indicated that the effect of parental wealth may be the strongest: postsecondary schooling (Conley 1999). Specifically, I break down the process of post-high school educational attainment into specific stages and examine when parental wealth has an impact. These transitions are (1) the pursuit of any schooling after high school, (2) the completion of a bachelor's degree, and (3) the completion of graduate schooling (regardless of whether a degree was received). It is useful to understand whether parental wealth has stronger effects as students move up the educational ladder or whether its impact tapers off. Hypotheses can be generated for each claim. On the one hand, there may be a winnowing effect, in which economic disadvantage does not have an immediate impact on the educational careers of students, but causes students to opt out of school in favor of the labor market as cumulative economic pressures increase. This interpretation is supported by research that has demonstrated stronger effects of wealth in college than in high school and

research that has shown that racial disparities widen as students advance higher up the educational ladder (Conley 1999).

On the other hand, it is reasonable to expect that parental variables become less salient as students become older and more independent. In this account, there may be a winnowing effect, but it may be related more to individual skills than to parents' economic circumstances. Furthermore, as students progress, their expenses may be more likely to be covered by other sources of support. In particular, graduate school (if not professional school) may often be paid for by research and teaching assistantships.

In addition to examining the impact of parental wealth on higher education, I test whether parental income and assets are best modeled as separate variables or whether they are fungible. This is an important issue, since it has implications for how income and wealth affect schooling. If income and wealth are more or less transferable, that is, if income can be capitalized or wealth annuitized so as to combine them to the same or better ends as keeping them separately measured, the implication is that the effects of both are largely monetary and that parental assets operate in a liquid market with respect to education. For instance, if it is fairly easy for parents to take out home equity loans to pay for their children's college tuition and if this is the major reason why housing wealth matters, then one should expect housing equity to behave as income when it is converted using the "correct" discount rate. However, if housing equity provides more than just "money" for college, then models that keep housing equity separate from other economic resources should outperform those that fold it into a more general measure of financial well-being.

METHOD

Data and Research Strategy

Until 1984, national data on net worth and savings were not readily available in a longitudinal framework. However, in 1984, the Panel Study of Income Dynamics (PSID) included a supplement that documented respondents' assets and inheritances received. The data that I analyzed for this study came from the PSID, interview years 1984–95 (for a fuller description of the PSID data set, see Hill 1992). This multiyear sample allowed me to analyze wealth in a longitudinal, intergenerational framework.

In analyzing the data, I used the following strategy: I investigated the role of households' level of wealth in 1984 on the outcomes of children in these households (whether or not they moved out of the parental home) by 1995, when the respondents were aged 19–30. Specifically, for the analysis of the transition to college, I used only those individuals who met the foregoing sample criteria and who completed high school. For the analysis of college (baccalaureate) completion, I restricted the sample even further to include only those who had completed at least some postsecondary schooling and who had reached their 22nd birthday (since this is normally the earliest point at which a bachelor's degree is completed). Finally, for the analysis of the attainment of a graduate degree, I included only those individuals who completed bachelor's degrees and who had reached age 23 (on the assumption that the minimum time it would take to complete an advanced degree would be one additional year). Note that when I removed these age restrictions, the samples did not increase by more than a handful of cases and the results did not change substantively.

By relying on an analysis of the effects of parental wealth during an individual's adolescence on his or her later outcomes, I hoped to avoid the problem of reverse causality. If I measured wealth and its consequences at the same time—in a snapshot fashion—I would never be sure whether wealth was affecting education, for instance, or whether education was affecting levels of wealth. I tried to avoid the lion's share of reverse causation by taking care to order my measurement of indicators temporally, but I must stress from the outset that family economic dynamics are complex, and even the most careful efforts to avoid such pitfalls as reverse causality are not foolproof. For example, if parents knew that their teenager would

succeed in school and be able to win a full scholarship, they might decide not to save as much money. This possibility would present a case in which the causality ran from child's education to parent's wealth level (with a negative relationship), even though the latter was measured a decade earlier than what was causing it. More realistically, parents might have had spent all their wealth on private, early childhood education for their offspring and thus had little left by the time their child was a teenager in 1984. Although such a dynamic would not constitute reverse causation per se, it, too, would result in an underestimation of the effect of parental net worth, since the wealth would have already had its impact and would have been gone by the time it was measured in 1984.

I could have retained a larger sample of respondents if I had relaxed the requirement that the individual had to be a son or daughter of the head of the household in 1984—the first time wealth was measured. Instead, I could have added to the pool of selected respondents those who had once lived in the PSID family for which I had data on wealth but who had split off and formed their own households by 1984. This method would have been problematic, since the causality assumptions that I outlined earlier would have been violated. In other words, for an individual who had left the parental household in 1974, I could not be sure whether the value of his or her parents' wealth 10 years later was a cause or effect of the level of attainment because my argument is that securing high socioeconomic status for one's children costs wealth. Furthermore, I could not know whether the level of assets (or debt) was similar during that respondent's childhood. Therefore, I chose to include only children who were in the main family sample during the time of the 1984 wealth supplement. This choice limited the upper age of the sample I drew to 30 in 1995, which made them 19 when they were living at home in 1984. If I had raised this age bar, I would have added individuals who were living at home during their 20s, and again, reverse causality might have been an issue, since they might have begun their college careers before wealth was measured.

In short, I attempted to order my models temporarily to make the best causal inferences possible given the data. However, given the complex psychological and economic decision making going on within families, I caution that the purpose of this article is not to provide the definitive word on measuring the effects of wealth and its relationship to education, income, or other dynamics of socioeconomic status. If, for example, the PSID measured assets and liabilities every year, as opposed to every five years, a more precise determination of household income and wealth dynamics might be more feasible. In addition, if the PSID included questions on the motivations of respondents for their economic plans and documented each investment and consumption decision, such an enterprise might be more tractable. In the end, however, it is probably not feasible within the context of survey research but, rather, would be better suited to in-depth, anthropological methods that seek to understand the decision-making dynamics within households.

The purpose of the current study was more modest: to show that by taking a more thorough accounting of the economic resources available to American families (by not limiting ourselves to income measures), researchers may reveal a much greater impact of financial resources on academic success than has been ascertained in previous models. My underlying assumption is that because of their omission of asset measures, traditional models of status attainment (such as by Blau and Duncan 1967; Featherman and Hauser 1978; Jencks et al. 1972) have not fully accounted for the types of family resources that are salient to both the conception of social class and to the prediction of the socioeconomic attainment of children.[4]

The general rationale behind my formulations was to provide educational transition models for postsecondary educational attainment that include traditional measures of social class and other relevant background variables (family structure, age and other demographic indicators), along with my measures of wealth or interest to test whether—net of the variables traditionally included in a stratification model—assets

have a significant effect. I added assets in two ways. First, I added measures of net worth separately, that is, in addition to income measures, which allowed net worth to have distinct effects that are qualitatively different from the benefits provided by income. Second, I converted net worth into an income stream using an interest rate—as might be done to convert wealth into an annuity. I then added this income to the measured annual income measure. I used a variety of discount rates and tested various formulations that "annuitized" total net worth, total net worth less housing equity, and only liquid net worth. In the next section, I elaborate on these formulations and outline the variables included in my analyses (descriptive statistics are in Table 1; mean values correspond to those found by other researchers).

Variables

Respondent's Age and Gender Since there was a range in the age of respondents at the time I measured their educational outcomes (1995), I controlled for the age of the respondent. It was important to do so because the younger individuals in the sample might not have not completed their ultimate level of schooling and there might have been cohort effects that would work in the opposite direction. The respondent's gender (an indicator for female) was also included because women have been shown to attain higher levels of education than have men (Smith, Young, Bae, Choy, and Alsalam 1997).

Race It was essential to control for race, since the net worths of blacks are on the order of one-twelfth that of whites (Conley 1999; Oliver and Shapiro 1995). This predictor was measured as the race of the household head as recorded by the PSID interviewer. It does not take into consideration the race of other members of the household (therefore, the child in question may have been biracial, but this fact would not have been recorded). It is important to note that although I included indicator variables for members of racial groups other than blacks and whites, because of the longitudinal sampling design of the PSID (and some initial miscalculations in 1968), these groups were greatly underrepresented by the standards of the 1990 population makeup. Thus, I did not interpret the coefficients for these groups. Latino is not a category in the race variable, but a separate indicator of "Spanish origin." Thus, Latino respondents may be white, black, or "other" race.

Parental Age Researchers have shown that age has a variable effect on the accumulation of wealth over the life course. During the prime working years of adulthood, levels of wealth steadily rise owing to savings, inheritance, and investment performance (a first-order effect). However, when individuals leave the labor market at the age of retirement, they generally start to dissave—that is, to spend down their capital (a quadratic effect). Some research (for example, Land and Russell 1996) has suggested that this effect reaches an equilibrium (a cubic effect), that individuals do not spend down all their savings until death as the economic, life-cycle model would predict. Obviously, even if they want to, people cannot readily predict their own mortality and hence may keep some funds in reserve in case they outlive their own life expectancy. Then, of course, there is the issue of the desire to pass on financial assets to the next generation. Since age is associated with levels of wealth, I held the age of the head of the parental household constant in my examination of the impact of wealth on socioeconomic attainment (along with a quadratic term; there did not appear to be a significant cubic effect in the education models).

Permanent Income Obviously, higher-income families tend to have higher levels of wealth. I did not include only the prior year's income in the statistical models; I held constant the average income for the previous five years to correct for short-term fluctuations in income that were due to shocks, such as unemployment or windfall. Economists often use such a five-year measure as a proxy indicator of "permanent income." Permanent income represents the total income that an individual (or family) can expect to earn in a lifetime. In theory, if there were no credit constraints, individuals could borrow on future

Table 1. 1995 Respondents Who Were Sons or Daughters of Heads of 1984 PSID Families: Mean Values (standard deviations in parentheses)

	High School Graduates, Aged 19–30	Attended at Least Some "College," Aged 22–30	Completed College (Bachelor's Degree), Aged 23–30
Respondents' Characteristics			
Black	.094 (.291)	.073 (.260)	.040 (.197)
Latino	.014 (.119)	.009 (.096)	.013 (.112)
Other	.008 (.090)	.015 (.122)	.031 (.173)
Female	.488 (.500)	.505 (.500)	.496 (.500)
Age (in 1992)	25.558 (3.120)	26.094 (2.567)	26.865 (2.166)
Number of siblings	2.383 (1.825)	2.180 (1.670)	2.094 (1.401)
Completed some college	.528 (.499)	—	—
College graduate	.275 (.447)	.516 (.500)	—
Graduate degree	.045 (.208)	.084 (.278)	.174 (.379)
Total years of schooling	13.573 (1.777)	15.002 (1.314)	16.174 (.379)
Parental Characteristics			
Age of head of household (1984)	42.58 (7.66)	43.86 (7.40)	45.03 (6.73)
Proportion of years female head, 1980–84	.123 (.294)	.101 (.271)	.075 (.235)
Education of head of household (1984)	12.832 (2.379)	13.625 (2.348)	14.354 (2.140)
Proportion of years head of household unemployed (1980–84)	.123 (.294)	.101 (.271)	.075 (.235)
Occupational prestige of head of household	41.950 (13.434)	45.458 (13.188)	47.972 (12.627)
Income (1980–84, constant 1995 dollars)	61,264 (44,715)	71,994 (51,442)	82,869 (59,292)
Net worth (1984)	169,077 (622,281)	243,245 (807,760)	288,980 (857,988)
N	1,126	545	223

Note: Weighted by the 1984 family-level weight assigned by the PSID.

expected earnings or save for anticipated declines in income to maintain a more or less steady level of consumption over the life course.

The accumulation of assets and spending downplay an important role in the maintenance of a lifestyle. Although permanent income is a theoretical concept that could never be actually measured (except perhaps with income data on an individual for every year from birth to death), researchers who attempt to predict socioeconomic outcomes have found that adding more years to the five-year average adds little explanatory power (Mayer 1997). Thus, I adopted the standard five-year proxy measure, averaged after being adjusted for inflation to 1996 dollars; I then logged this amount to the base e.[5]

Head's Employment Status Over and above average income levels, repeated or persistent bouts of unemployment may act as a drain on assets (if, in fact, assets act as a financial cushion to smooth out consumption over income shocks). Thus, I controlled for the proportion of time between 1980 and 1984 that the head was unemployed or out of the labor force.

Occupational Prestige In addition to the five-year proxy for parental permanent income, I also included the occupational prestige score of the head of the parental household's most recent job, which has also been shown to be a useful proxy for permanent income (for the measurement of this variable, see Siegel 1971). In addition, individuals who are employed in high-status professions may receive a number of perks, such as expense accounts or company cars, that allow them to avoid many household expenses, thereby freeing up more money for consumption or savings. Even more critical is the possibility that high-status professions may be more likely to have profit-sharing plans, matching contribution retirement funds, or 401k plans. Finally, the impact of occupational prestige on children's outcomes has been repeatedly demonstrated in the stratification literature (see Blau and Duncan 1967 for a classic example), and this measure may also act as a proxy for permanent income.

Family Structure and Parental Age In comparing the attainment of young adults, one must also consider the gender of the household head during the young adults' childhoods. Scholars have shown that female-headed households have lower levels of wealth (Hao 1996), so this factor needs to be controlled to estimate the net effect of parental wealth. Rather than use a snapshot approach, I included a measure of the gender of the headship over the same five-year period as I did for permanent income. Female headship also acts as a good proxy for a single-parent family unit. Furthermore, McLanahan and Sanderfur (1994), among others, found that children who are raised in single-parent and/or female-headed households do more poorly in school than do those who are raised in two-parent, male-headed households. In addition, since children who are born to young parents tend to demonstrate lower levels of educational achievement and attainment (see, for example, McLanahan and Sanderfur 1994), I included parental age in the analysis of education. Finally, children from large families tend to complete less schooling than do those from small families (Heer 1985), so I included the number of siblings of the respondent as a control variable.

Parental Education Over and above the factors that I have already discussed, parents' educational levels also affect the socioeconomic outcomes of offspring (particularly the offspring's educational attainment). Furthermore, parental education affects a number of indicators that were already mentioned, such as income, occupational prestige, and even family structure, and thus indirectly affects children's socioeconomic status through these factors. I included an indicator of the highest grade completed of the better-educated parent. A value of 12 indicates a high school degree; 16 indicates a bachelor's degree; and 17 indicates any form of post-baccalaureate training regardless of whether a degree was received (this is the formulation of the PSID).

Parental Net Worth Parental net worth, the variable of primary interest, was operational-

ized in several ways. First, I estimated an effect of net worth that is distinct from income. I did so by adding to the original income-only model a variable that is the natural logarithm of positive net worth (those with zero or negative net worth made up a small percentage of the total cases and were excluded from the analysis).[6] Second, I converted the parents' net worth—self-reported in 1984—into an income stream by multiplying it by an arbitrary discount rate and then adding this total to the parents' average income for the years 1980–84 (both income and wealth were converted into 1995 dollars using an inflation adjuster). I then took the natural logarithm of this total, as I had for income alone in the base model. I tested various discount rates, ranging from 6 percent to 20 percent, for the most efficacious one, as measured by an L^2 statistic for the difference from the base model (without any economic measures). Next, I tested the same formulation excluding the component of net worth that is represented by equity in the main family home. Finally, I pursued the same strategy using only liquid assets, that is, those that can easily be converted into income (such as stocks, bonds, mutual funds, and cash accounts). Models using this variety of approaches are compared in Table 3.

Respondent's Education This was my dependent measure in the analysis. It was operationalized in two ways. First, I used ordinary least squares to model the total number of years of schooling (coded as parental education, described earlier) and number of years of postsecondary schooling. Next, I used logistic regression to model the log-odds on making three educational transitions. First, among all the eligible respondents who completed high school and were at least 19 years old, I predicted the odds of having completed at least some postsecondary schooling. Second, among those who completed some postsecondary schooling and were at least 22 years old, I modeled their probability of completing college (obtaining a bachelor's degree). Third, among those who completed college and were at least 23 years old, I predicted their probability of having attended graduate school.

FINDINGS

The first set of results, presented in Table 2, show the various formulations of education as predicted by the entire set of control variables but excluding net worth. These results allow for a comparison of coefficients against the results shown in Table 3, which add the term for parental net worth to these base models. The effects of most of the variables are consistent with past research using this and other data sets. For instance, blacks and women have an advantage in total years of schooling after other sociodemographic characteristics are controlled. There is a positive effect of age on completed schooling; note that this is an age effect, not a cohort effect, since the period in which education is measured is fixed (1995) while there is variation in the age range of the sample. Those with more siblings fare worse than those with fewer siblings; this effect declines the further up the education ladder the individual ascends. Those with older parents generally do better than those with younger ones; again, this effect tapers off the further into higher education the student makes it.

In addition, parental education is significantly, positively associated with the respondent's education in all models except the prediction of graduate school attendance. Meanwhile, parental unemployment is negatively associated with educational outcomes; this effect weakens further up the educational ladder, however, as does the effect for parent's occupational prestige. Last, parental income is significant in predicting total years of schooling, but fails to reach significance for any of the postsecondary outcomes. This appears to be a departure from some previous work (c.f., Axinn, Duncan, and Thorton 1997; Duncan et al. 1998; Thomson, Hanson, and McLanahan 1994).

When I added parental wealth to these models (as shown in Table 3), I found only minor changes in the magnitude of the other effects—with the notable exception of race. The overall, net advantage for blacks in years of schooling went from .23 years to .32 years. This effect is born out in the probability of transitioning from high school to college. With parental wealth controlled, blacks enjoy

Table 2. Log-Odds on Educational Transitions: 1995 Respondents Who Were Sons or Daughters of 1984 Heads of Families (standard errors in parentheses)

Model	Total Years of Schooling (Ages 19–30)	Post-High School Years of Schooling (Ages 19–30)	Some College + (Ages 19–30)	Bachelor's Degree + (Ages 22–30)	Graduate Schooling (Ages 23–30)
Respondents' Characteristics					
Black	.230*	.093	.162	-.440^{+}	-.860
	(.103)	(.106)	(.152)	(.245)	(.902)
Latino	-.118	-.034	-.176	1.432	-4.812
	(.357)	(.436)	(.656)	(1.089)	(25.618)
Other	.883	1.079^{+}	3.557	.797	.330
	(.552)	(.576)	(5.052)	(1.112)	(1.020)
Female	.380***	.245**	.304*	.176	.863*
	(.087)	(.089)	(.129)	(.188)	(.425)
Age (1992)	.098***	.085***	.074**	.134***	.247*
	(.015)	(.017)	(.024)	(.041)	(.110)
Number of siblings	-.124***	-.105***	-.140***	-.080	-.195
	(.027)	(.027)	(.040)	(.061)	(.155)
Parental Characteristics					
Age of head of household (1984)	.024**	.030***	.039***	.019	.020
	(.008)	(.008)	(.012)	(.016)	(.035)
Proportion of years female head (1980–84)	-.138	-.096	-.094	-.029	-4.922
	(.161)	(.163)	(.235)	(.375)	(3.675)
Education of head of household (1984)	.177***	.154***	.161***	.192***	.099
	(.022)	(.022)	(.034)	(.051)	(.132)
Proportion of years head of household unemployed (1980–84)	-.799**	-.748*	-1.525**	-.372	-1.425
	(.296)	(.319)	(.492)	(.954)	(3.162)
Occupational prestige of head of household (1980–84)	.018***	.012**	.014*	.003	.004
	(.004)	(.004)	(.006)	(.009)	(.021)
Natural logarithm of income (1980–84, constant dollars)	.214*	.143	.090	.159	-.605
	(.109)	(.108)	(.157)	(.220)	(.468)
Constant	4.541	6.259	-2.931	-6.119	-8.570
	(1.055)	(1.060)	(5.326)	(2.782)	(26.119)
R^2 / $-2LL_{df}$	.221	.210	162.621***$_{12}$	80.746***$_{12}$	25.187*$_{12}$
N	1,554	1,126	1,126	545	223

$^{+}$ $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

a net advantage in the likelihood of going on to college. That said, parental wealth itself has a significant impact on overall years of schooling such that a doubling of assets raises the associated total number of years of schooling by .12 years. It is also associated with an increase of .11 years in the number of post-high school years of formal education. When I looked at postsecondary educational transitions, I found that the doubling of assets results in an 8.3 percent increase in the probability of going to college after graduating from high school. Likewise, once an individual is enrolled in college, the chances of him or her graduating increase by 5.6 percent when parental assets are doubled—and when all other covariates are held constant (though this effect is only marginally significant at the $p < .10$ level).

Table 4 examines the functional form of parental wealth and income for the most robust transition model: from high school to college attendance. The base reference model is one without either income or wealth. To this model, I added income alone (the five-year logged average), which does not make a significant improvement in the model. Next, I assessed the strategy of converting total net worth into an income stream and adding it to total family income. The first set of models in this category (row C) converts net worth using a 6 percent discount rate. I continued to increase this discount rate to 10 percent (rows C–E). (Note that the effects level off or decline with increases in the discount rate after this mark.) This approach yields significant model improvements over the base (row A) for the transition to college. The next model (row F) uses the same approach but removes the equity in the primary residence from the calculations, under the assumption that it may not be as possible to convert this form of wealth into income for schooling. Here, there is an improvement of the base model. Finally, I show the effect on the model of estimating the effect of wealth and income independently. This approach yields superior models all around. From this exercise, it appears that there is circumstantial support for the notion that wealth is not analytically or conceptually reducible to an equivalent income stream (at least with respect to this outcome measure). That is, it may have other, noneconomic effects, such as those suggested in the introduction to this article. Further research is needed to uncover the causal pathways by which such effects occur.

DISCUSSION

Parkin (1979:47–48) argued that "in modern capitalist society the two main exclusionary devices by which the bourgeoisie constructs and maintains itself as a class are, first, those surrounding the institutions of property; and second, academic or professional qualifications and credentials." This article has shown that these two "exclusionary devices" are not independent of each other, since parents may use wealth—that is, property—to finance their children's educational and professional credentials, thereby solidifying their class position on the human capital dimension. In other words, nonhuman capital (property) and human capital are linked across generations. The analysis presented here demonstrated the impact of parental wealth on the educational outcomes of young adults, specifically in the transition to postsecondary schooling.

However, this is only one of the mechanisms by which wealth can have an impact on the class status of the next generation. I was limited by the young age of the filial generation, but future researchers may want to assess the impact of wealth on other measures of filial status, such as occupational prestige; income; and, ultimately, lifestyle and family well-being. Likewise, future researchers may want to uncover the exact mechanisms by which wealth has an impact on the educational outcomes of youths (and assess whether such effects are due to unobserved heterogeneity across high- and low-wealth families). Questions to be answered in this vein include these: Do different forms of wealth have different impacts at different stages of schooling? Does wealth have an impact only on the financing of education (such as whether a student attends a private or public school)? Or does it demonstrate some of the more subtle, social psychological

Table 3. Log-Odds on Educational Transitions: 1995 Respondents Who Were Sons or Daughters of 1984 Heads of Families (standard errors in parentheses)

Model	Total Years of Schooling (Ages 19–30)	Post-High School Years of Schooling (Ages 19–30)	Some College + (Ages 19–30)	Bachelor's Degree + (Ages 22–30)	Graduate Schooling (Ages 23–30)
Respondents' Characteristics					
Black	.320**	.181+	.316*	-.295	-.671
	(.104)	(.107)	(.158)	(.257)	(.922)
Latino	-.113	-.034	-.161	1.542	-4.606
	(.354)	(.432)	(.656)	(1.100)	(25.552)
Other	.866	1.075+	4.529	.779	.256
	(.548)	(.571)	(8.319)	(1.111)	(1.023)
Female	.372***	.231**	.298*	.180	.871*
	(.086)	(.089)	(.131)	(.189)	(.426)
Age (1992)	.095***	.080	.067**	.133**	.271*
	(.015)	(.016)	(.024)	(.041)	(.113)
Number of siblings	-.107***	-.095***	-.126**	-.072	-.185
	(.027)	(.027)	(.040)	(.062)	(.159)
Parental Characteristics					
Age of head of household (1984)	.017*	.080***	.032**	.133	.010
	(.008)	(.016)	(.012)	(.041)	(.036)
Proportion of years female head (1980-84)	-.001	.038	.111	.094	-4.625
	(.162)	(.164)	(.212)	(.381)	(3.452)
Education of head of household (1984)	.167***	.150***	.154***	.193***	.105
	(.021)	(.022)	(.034)	(.051)	(.134)
Proportion of years head of household unemployed (1980-84)	-.587*	-.547+	-1.320**	-.295	-4.625
	(.296)	(.319)	(.502)	(.964)	(3.452)
Occupational prestige of head of household (1980-84)	.017***	.011**	.013*	.004	.005
	(.004)	(.004)	(.006)	(.009)	(.021)
Natural logarithm of income (1980-84, constant dollars)	.017	-.016	-.151	-.026	-.952+
	(.114)	(.112)	(.167)	(.241)	(.553)
Natural logarithm of net worth (1984)	.172***	.158***	.243***	.163+	.280
	(.033)	(.034)	(.053)	(.086)	(.233)
Constant	5.311	6.708	-1.266	-6.119	-7.997
	(1.056)	(1.054)	(8.493)	(2.782)	(26.048)
R^2 / $-2LL_{df}$	.234	.226	185.142$^{***}_{13}$	84.432$^{***}_{13}$	26.671$^{*}_{13}$
N 1,554	1,126	1,126	545	223	

+$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

Table 4. Model Comparison for Log-Odds on the Transition to College: 1995 Respondents Who Were Sons or Daughters of 1984 Heads of Families

Model	Some College + (Ages 19-30; N = 1,126)
A. No economic measures	—
B. Natural logarithm of income	0.33_1 (B – A)
C. Natural logarithm of (income + 6 percent of wealth)	4.58_1* (C – A)
D. Natural logarithm of (income + 8 percent of wealth)	5.75_1* (D – A)
E. Natural logarithm of (income +10 percent of wealth)	6.87_1* (E – A)
F. Natural logarithm of (income + 10 percent of wealth - home equity)	3.00_1+ (F – A)
G. Natural logarithm of (income + 10 percent of liquid assets)	1.45_1 (G – A)
H. Natural logarithm of income + natural logarithm of wealth)	22.52_1*** (H – B)

Note: Cell values are L^2 differences from previous models (indicated in parentheses) with degrees of freedom and significance levels.

$^+p < .10$, $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

effects that enhance the educational attainment of offspring? That is, can an effect of wealth be detected in students' aspirations, educational expectations, and even performance? Last, scholars may want to investigate the possibility that wealth has a different impact, depending on family type, race, parental education, and so on. That is, wealth may matter more for some individuals who lack nonfinancial assets and less for those who enjoy such advantages.

NOTES

1. The exceptions to this claim include Rumberger (1983), who studied the impact of parental wealth on respondents' educational attainment, earnings, and net worth using the National Longitudinal Survey. However, his model did not include parental income and thus did not determine the net impact of both income and wealth. Hill and Duncan (1987), who factored out various types of income, including income from assets, found that income from assets has a positive impact on the educational attainment of daughters, but not of sons. Thomson et al. (1994), in contrast, found no effects of parental wealth on the academic performance of 12–18 year olds in the 1987–88 National Survey of Families and Households (in K–12 schooling, but not in postsecondary schooling as is addressed here). Using the Detroit Area Study, Axinn et al. (1997) found

a weak positive effect of wealth on overall educational attainment. Finally, Conley (1999) modeled the impact of parental wealth and income in explaining racial differences in attainment. It is this work that I built on in the current study.

2. It is important to note that much of the variance in the inequality of wealth can be attributed to fluctuations of the stock market, with higher securities prices translating into greater inequality of wealth (Wolff 1996).

3. Modigliani (1988) suggested a much lower figure of 20 percent; differences between these authors' figures largely reflect the definition of a *transfer* across generations. White (1978) reached conclusions similar to those of Kotlikoff and Summers (1981).

4. Whether the effects I attribute to wealth actually reflect unobserved family differences or permanent income levels (lifetime expected earnings), for example, is not my primary concern. Undoubtedly, there are many omissions of possible alternative explanations, ranging from the economic to the attitudinal to the genetic.

5. In my analysis, I also tried controlling for whether or not the family received public assistance (welfare) during the same year in which I measured net worth (1984); this was a priori important, since most states at that time prohibited ownership of assets in their determination of eligibility for welfare. As a result, nonownership of wealth might have been acting as a proxy for the use of welfare by the family, and I checked for this possibility by including an indicator variable. The receipt-of-welfare variable was insignificant in all models and demonstrated a high standard error; thus, it was dropped from the final models shown.

6. Note that the natural logarithm specification outperformed linear versions of net worth, which were not significant in general.

REFERENCES

Axinn, William, Greg J. Duncan, and Arland Thorton. 1997. "The Effects of Parents' Income, Wealth, and Attitudes on Children's Completed Schooling and Self-Esteem." Pp. 518–40 in *Consequences of Growing Up Poor*, edited by Greg J. Duncan and Jeanne Brooks-Gunn. New York: Russell Sage Foundation.

Blau, Peter, and Otis D. Duncan. 1967. *The American Occupational Structure.* New York: John Wiley & Sons.

Conley, Dalton. 1996. "A Room with a View or a Room of One's Own: Housing and the Educational Stratification of Blacks and Whites." Paper presented at the annual meeting of the American Sociological Association, Washington, DC.

—. 1999. *Being Black, Living in the Red: Race, Wealth and Social Policy in America.* Berkeley: University of California Press.

Duncan, Greg J., W. Jean Yeung, Jeanne Brooks-Gunn, and Judith R. Smith. 1998. "How Much Does Childhood Poverty Affect the Life Chances of Children." *American Sociological Review* 63:406–23.

Featherman, David L., and Robert M. Hauser. 1978. *Opportunity and Change.* New York: Academic Press.

Gottfried, Allen W. 1984. *Home Environment and Early Cognitive Development: Longitudinal Research.* Orlando, FL: Academic Press.

Hao, Ling-Xin. 1996. "Family Structure, Private Transfers, and the Economic Well-being of Families with Children." *Social Forces* 75:269–92.

Hauser, Robert M., and Daymont, Thomas N. 1977. "Schooling, Ability and Earnings: Cross-sectional Findings 8 to 14 Years after High School Graduation." *Sociology of Education* 50:182–206.

Hauser, Robert M., and David L. Featherman. 1976. "Equality of Schooling: Trends and Prospects." *Sociology of Education* 49:99–120.

Hauser, Robert M., and Peter A. Mossel. 1985. "Fraternal Resemblance in Educational Attainment and Occupation." *American Journal of Sociology* 91:650–73.

Hauser, Robert M., and William H. Sewell. 1986. "Family Effects in Simple Models of Education, Occupational Status, and Earnings: Findings from the Wisconsin and Kalamazoo Studies." *Journal of Labor Economics* 4:S83–S115.

Hauser, Robert M. and Raymond Sin-Kwok Wong. 1989. "Sibling Resemblance and Intersibling Effects in Educational Attainment." *Sociology of Education* 62:149–71.

Heer, David M. 1985. "Effects of Sibling Number on Child Outcome." *Annual Review of Sociology* 11:27–47.

Hill, Martha. 1992. *The Panel Study of Income Dynamics: A User's Guide.* Newbury Park, CA: Sage.

Hill, Martha, and Greg Duncan. 1987. "Parental Family Income and the Socioeconomic Attainment of Children." *Social Science Research* 16:39–73.

Jencks, Christopher S., Susan Bartlett, Mary Corcoran, James Crouse, David Eaglesfield, Gregory Jackson, Kent McClelland, Peter Mueser, Michael Olneck. Joseph Schwartz, Sherry Ward., and Jill Williams. 1979. *Who Gets Ahead? The Determinants of Economic Success in America.* New York: Basic Books.

Jencks, Christopher S., Marshall Smith, Henry Ackland, Mary Jo Bane, David Cohen, Herbert Gintis, Barbara Heyns, and Stephen Michaelson. 1972. *Inequality: A Reassessment of the Effect of Family and Schooling in America.* New York: Basic Books.

Kotlikoff, Laurence J., and Lawrence H. Summers. 1981. "The Role of Intergenerational Transfers in Aggregate Wealth Accumulation." *Journal of Political Economy* 89:706–32.

Kuo, Hsinag-Hui Daphne, and Robert M. Hauser. 1995. "Trends in Family Effects on the Education of Black and White Brothers." *Sociology of Education* 68:136–60.

Land, Kenneth C., and Stephen T. Russell. 1996. "Wealth Accumulation across the Adult Life Course: Stability and Change in Sociodemographic Covariate Structures of Net Worth Data in the Survey of Income and Program Participation, 1984–1991." *Social Science Research* 25:423–62.

Mayer, Susan E. 1997. *What Money Can't Buy: Family Income and Children's Life Chances.* Cambridge, MA: Harvard University Press.

McLanahan, Sara, and Gary Sandefur. 1994. *Growing Up with a Single Parent: What Hurts and What Helps.* Cambridge, Ma.: Harvard University Press.

Modigliani, Franco. 1988. "The Role of Intergenerational Transfers and Life Cycle Saving in the Accumulation of Wealth." *Journal of Economic Perspectives* 2:15–40.

Oliver, Melvin L., and Thomas M. Shapiro. 1995. *Black Wealth/White Wealth.* New York: Routledge.

Parkin, Frank. 1979. *Marxism and Class Theory: A Borugeois Critique.* New York: Columbia University Press.

Rumberger, Russell W. 1983. "The Influence of Family Background on Education, Earnings and Wealth." *Social Forces* 61:755–73.

Sewell, William H., and Robert M. Hauser. 1975. *Education, Occupation and Earnings.* New York: Academic Press.

Siegel, Paul M. 1971. "Prestige in the American Occupational Structure." Unpublished Ph.D. dissertation, Department of Sociology, University of Chicago.

Smith, Thomas M., Beth Aronstamm Young, Yupin Bae, Susan P. Choy, and Nabeel Alsalam. 1997. *The Condition of Education 1997* (NCES 97–388). Washington, DC: U.S. Government Printing Office.

Spilerman, Seymour, Noah Lewin-Epstein, and Moshe Semyonov. 1993. "Wealth, Intergenerational Transfers and Life Chances." Pp. 165–86 in *Social Theory and Social Policy: Essays in Honor of James S. Coleman,* edited by Aage Sørensen and Seymour Spilerman. New York: Praeger.

Thomson, Elizabeth, Thomas L. Hanson, and Sara S. McLanahan. 1994. "Family Structure and Child Well-Being: Economic Resources vs. Parental Behaviors." *Social Forces* 73:221–42.

Western, Mark, and Erik O. Wright. 1994. "Class Boundaries and Intergenerational Mobility among Men." *American Sociological Review.* 59:606–29.

White, Betsy Buttrill. 1978. "Empirical Tests of the Life Cycle Hypothesis." *American Economic Review* 68:547–60.

Wolff, Edward N. 1996. *Top Heavy: The Increasing Inequality of Wealth in America and What Can Be Done About It.* New York: New Press.

Dalton Conley, Ph.D., *is Associate Professor, Department of Sociology, and Director, Center for Advanced Social Science Research, New York University. His main fields of interest are sociology of education, stratification, and race. He is currently conducting research on sibling models.*

The research presented here was made possible by Grant 95-21011 from the National Science Foundation and a grant from the Robert Wood Johnson Foundation. The author thanks Seymour Spilerman for his extensive contribution to this line of research. Address all correspondence to Dr. Dalton Conley, Center for Advanced Social Science Research, New York University, 269 Mercer Street, 4th floor, New York, NY 10003; E-mail: dalton.conley@nyu.edu.