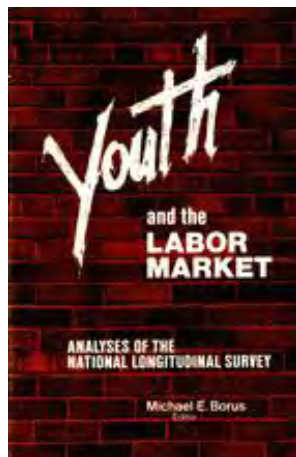

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Chapter 5

Quantity of Learning and Quality of Life for Public and Private High School Youth

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Even in quantity it is and is likely to remain, altogether insufficient, while in quality, though with some slight tendency to improvement, it is never good except by some rare accident, and generally so bad as to be little more than nominal.

J.S. Mill, *Principles of Political Economy* (1848)

The issue of how much a society should use public or private institutions to educate its citizenry is a fundamental question of democracy. Not surprisingly, its salience increases at times when the educational system as a whole is under attack. John Stuart Mill's dismal assessment of English popular education as it existed in 1848 is strikingly similar to criticisms of American education today. Paradoxically, it was government-subsidized private education which bore the brunt of his criticism then. Mill advocated reducing

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the role of private schools and giving more support to the better quality, state-run schools.

Mid-nineteenth century England is, of course, quite different from late twentieth century America—at least most of us think so. Instead of a John Stuart Mill attempting to speak out on behalf of the “ignorant poor,” the many voices of American public opinion, expressed through polls, school board elections and the popular media, have been clamoring for improved education for their children. In the search for alternatives, many have questioned whether the public schools are performing as efficiently as the private schools. Perhaps public schools should become more “like” private schools, and even more directly, more parents should have the economic opportunity to enroll their children in private schools. Pending Congressional legislation to provide tax credits to parents who send their children to private schools is the most concrete manifestation of this public sentiment.

A basic premise of the current national debate is the belief that the average American child does in fact learn more in private than in public schools. Research by James A. Coleman, the nation’s preeminent educational sociologist, at first appeared to substantiate this belief. Coleman, Hoffman, and Kilgore’s (CHK) 1981 study of public and private schools has been widely publicized, but also heavily criticized by the social science research community. The specific theoretical and methodological issues under attack are discussed in detail elsewhere (e.g., Olneck 1981; Bryk 1981; Goldberger and Cain 1982; Morgan 1983). In this chapter we shall take a new look at learning in public and private schools, using the fresh data base of the NLS survey and a different theoretical perspective.

Omitted from the CHK study was any reference to existing social science theory on how schooling operates, or to any of the sociological work to which Coleman himself had been an

important early contributor (Coleman 1961). What CHK provided was a loose input-output economic metaphor by which to organize their results. Each of the four analytic chapters in their report was addressed to one of the following questions: "Who is in the schools? What resources go into them? What goes on? and What comes out?" (CHK 1981, p. 6). This implicit education production function (Hanushek 1979) needs much greater refinement, however, if it is to move beyond the status of metaphor and provide explicit theoretical guidance in analyzing possible learning differences between public and private school youth.

The first and most important refinement has to do with the assumption that each sector operates in some characteristic total manner on all students to produce learning in varying degrees of efficiency. As Brown and Saks (1981) have recently demonstrated, internal decisions made to allocate resources have a crucial bearing on overall level of learning within classrooms. This argument for resource allocation, although ignored by CHK, also applies at the macro-level of effectiveness in school sector. Overall sector efficiency depends greatly on the decisions each sector makes about resource allocation. Insofar as the private sector devotes a larger share of its instructional time to college preparation, which it certainly does, its average level of cognitive achievement will be higher. Any adequate production function designed to gauge sector effectiveness must incorporate this difference, and the most direct procedure would be to include in the equation a track or curriculum enrollment variable. The important research question thus becomes whether or not private schools are more effective *net* of this resource allocation difference. To omit this variable from the production function, as CHK choose to do, is a serious misspecification.

A second related issue in this production function approach to national educational policy is the question of locus

of decisionmaking. Assuming an adequate school sector production function can be estimated, who would use this function to maximize the learning of American youth? Presumably national educational policymakers, yet Coleman has at the same time identified federal regulation of American public education as one of its principal weaknesses. In a popular policy journal, he charged that “public schools have become an overregulated industry, with regulations and mandates ranging from draconian desegregation to mainstreaming of emotionally disturbed children, to athletic activities that are blind to sex differences” (Coleman 1981). When he recommends tuition tax credits for parents who send their children to private schools, he argues it is a deregulation step, giving more parents latitude to choose the type of education they want their children to have. If individual parents are in fact the key policymakers, then it would seem an optimal household education consumption function (Becker 1976) would better inform their sector choice decision than would a national education production function.

Therefore the appropriate education for parents to choose for their child is one which provides the best opportunity to maximize the child’s human capital (learning and future earnings), given the constraints on parents of time, income, and production knowledge. The latter would include all factors that enter proper judgments about what type, level, and amount of schooling best maximizes the learning and earnings potential of a particular child. All other things equal, parents uncertain of their child’s abilities and interests might prefer a “comprehensive” public high school, providing the maximum flexibility in curricular choice. Parents who estimate their child has below-average ability or taste for schooling would also choose this type of school for its vocational and career training opportunities. Parents who believe their child has high academic ability or interest would prefer

schools with a strong college preparatory curriculum. Usually these are either private schools or high quality public schools in more expensive suburban neighborhoods. At least until recently, the extra expenditure for suburban housing and schooling was a more attractive resource allocation choice than private high school tuition payments.

Several social and economic changes may be altering this preference. One is the ever higher cost of suburban housing. Another is the increased number of dual wage-earner households. For working mothers, the preference for minimum commuting time may be a new consideration that offsets the value of larger, more distant housing. More important, the reduced parenting time available in these households may increase the attractiveness of private education where the development of attitudes, motivation, and discipline is a more explicit part of the school curriculum. The private boarding school is the extreme choice wherein affluent parents allocate income to compensate for low parenting time, but most private day schools, especially those offering religious instruction, also emphasize to parents the socialization goals of their curriculum.

The final and most important factor that underlies parents' private school enrollment decisions is the declining confidence in the quality of public school instruction. With the rapid expansion of higher education in the 1960s and 70s, college attendance began to be marketed as the optimal way to maximize human capital for youth of wide levels of ability (Freeman 1976). Higher education policies originally intended to promote minority access became redefined as "universal" access policies. At the high school level, this burgeoned the enrollment in college preparatory courses. Insofar as college preparatory teachers adapted by pitching their group instruction to a broader range of student ability, there was an overall decline in the standard of instruction. Private schools were better able to resist such a decline, screening out weaker

students through admissions procedures. Thus the expansion of higher education during the last two decades was a major reason for the disparity today in the academic standards of public and private high schools. This argument proposes that the disparity reflects a difference in resource allocation, however, not in actual instructional resources.

Alternatively, the belief in private school academic superiority may be more mythical than real, reflecting “white flight” racial prejudice and the fallacy among many American consumers of equating market price with product quality. Each generation of ambitious parents seeks new means to give their children a competitive edge, moving from speed reading classes to college entrance examination coaching, from home encyclopedias to home computers. It may be that this is the generation to champion private schooling. CHK’s report is the first major study to conclude private education produces superior learning. The findings here, however, do not support so simple a conclusion.

I. Study Design

Table 5.1 presents the unweighted sample frequencies for schools and youth across sectors in both the *High School* and *Beyond Survey* used by CHK and NLS samples. The HSB sample in CHK included 84 Catholic secondary schools and only 27 non-Catholic private secondary schools. By contrast, the NLS sample, although having only one-fifth as many youth, distributes those youth over more than three times as many secondary schools, including 279 Catholic and 244 other private schools.

After appropriate weighting, the two samples generate comparable population estimates for all but the other private sector. For the public and Catholic sectors, the NLS and HSB estimates are an average of 1 percentage point different from one another. Youth from public high schools are about

14 percent black, 6 percent Hispanic, and 30 percent Catholic, compared to 6 percent black, 6 percent Hispanic, and 90 percent Catholic for those attending Catholic schools. For the other private sector, the discrepancy between surveys averages 4 percentage points. According to NLS estimates, other private sector youth are 9 percent black, 4 percent Hispanic, and 24 percent Catholic.

Table 5.1
Comparison of Unweighted Sample Sizes
of NLS and HSB Surveys, by School Sector

Unit	School Sector			
	Public	Catholic	Other Private	Total
Youth:				
NLS total youth, aged 14-22 (1979)	11,983	414	299	12,686
HSB total students, sophomores and seniors	51,339	5,528	1,182	58,049
Schools:				
NLS total schools last attended ^a	2,996	279	244	3,519
HSB total schools currently attended	894	84	27	1,004

HSB SOURCE: Coleman, et al., 1981, table A.1.3, p. A-10.

a. NLS school total equals sum of each distinct "last high school attended" for all youth in sample.

A related sampling problem which has clouded the interpretation of CHK's findings is that the HSB sample is restricted to clusters of 10th and 12th graders who were currently enrolled in the sampled schools. Dropouts were excluded. This means that when CHK average the across-grade achievement differences at each school in order to compare

“learning growth” in each sector, they must somehow control for differential selectivity of 12th graders caused by the different dropout rates across sectors.¹ By contrast, the NLS target population is the cohort of all 33 million noninstitutionalized civilian and military youth who were aged 14-21 on December 31, 1978. The availability of the full spectrum of youth, from dropouts to valedictorians, and from high school freshmen to college graduates, permits a more complete assessment of the relative educational impact of the public and private secondary school sectors. This broad sample of youth received cognitive achievement tests administered at one point in time, independent of the youth’s age or school status. In the summer of 1980, when the cohort age range was 15-23, 11,878 youth (93.6 percent of the original 1979 sample) took the Armed Services Vocational Aptitude Battery (ASVAB) at over 400 test sites (for a detailed field report and psychometric data quality analysis, see McWilliams 1980; and Bock and Mislevy 1981). Ten subtests constitute the ASVAB. (See table 5.2) All subtests were multiple-choice paper-and-pencil tests, with either four or five alternative choices per item.

Table 5.2
The Armed Services Vocational
Aptitude Battery (ASVAB) Subtests

	Number items	Minutes
1. General Science	20	11
2. Arithmetic Reasoning	30	36
3. Word Knowledge	35	11
4. Paragraph Comprehension	15	13
5. Numerical Operation	50	3
6. Coding Speed	84	7
7. Auto and Shop Information	25	11
8. Mathematics Knowledge	25	24
9. Mechanical Comprehension	25	19
10. Electronics Information	20	9

The ASVAB subtests most similar to the Reading, Vocabulary, and Mathematics tests used in the CHK report are those called Paragraph Comprehension, Word Knowledge, and Arithmetic Reasoning. Table 5.3 reports these test scores for the younger half (15-19) of the NLS cohort together with the comparable scores for the HSB 12th graders. Of particular interest is whether the data sets agree in the assessment of relative achievement across sectors. In both data sets, Catholic and other private school youth score higher than public school youth on all three tests. However, the other private school sample scores consistently lower than the Catholic sector youth in the NLS, and scores higher in HSB. A key difference to be borne in mind in the interpretation of subsequent findings is that the other private schools in the NLS survey are an academically less selective set than the ones included in the HSB study. It is tempting to claim that the 244 schools in the NLS are more representative of the diversity in the other private school sector than the 27 HSB other private schools, but such a claim must be tempered with the realization that the actual respondent sample size is much smaller in the NLS.

Aside from this difference, the consistency across surveys in the public-Catholic achievement comparisons is rather remarkable. As shown in the bottom panel of table 5.3, in both studies Catholic youth score about one-third of a standard deviation higher than public school youth, and in both studies their greatest advantage is in vocabulary. In the NLS survey, however, the other private school sector superiority over public schools averages only one-fourth a standard deviation difference, compared to almost one-half a standard deviation difference in the HSB data.

In summary, the present study has differences from CHK in sampling design, data collection procedures, and measurement instruments. Yet with appropriate weighting and selection of comparable age groups, the two studies yield very

Table 5.3
Comparison of NLS and HSB Achievement Scores for Spring 1980
HSB Twelfth Graders and NLS Youth Aged 15-19 in Summer 1980

Subtest	NLS				HSB			
	Total	Public	Catholic	Other	Total	Public	Catholic	Other
Means:								
Reading	10.33	10.27	11.53	10.94	4.54	4.48	5.00	5.34
Vocabulary	24.18	23.99	27.39	26.68	4.58	4.48	5.35	5.56
Mathematics	16.72	16.58	18.84	18.68	10.80	10.63	12.10	12.74
Standard deviations:								
Reading	3.50	3.52	2.77	3.35	2.10	2.10	1.96	2.04
Vocabulary	7.60	7.62	6.45	7.12	1.97	1.97	1.74	1.94
Mathematics	7.05	7.00	7.14	7.56	4.24	4.24	3.82	4.14
Standard deviate differences:								
	Catholic-public		Other-public		Catholic-public		Other-public	
Reading	.36		.19		.25		.41	
Vocabulary	.45		.35		.44		.55	
Mathematics	.32		.30		.35		.50	

HSB SOURCE: Coleman, et al., 1982, table 3, p. 69.

similar population estimates of the background composition and achievement scores for youth from two of the three school sectors. Failure to replicate the population estimates for the other private school sector does lend credence to criticisms that the HSB sample of this sector was inadequate.

II. Sector Differences in Quantity Versus Quality of Schooling

The findings in this and the following section are directed toward the basic question of how much, if any, of the observed differences across sectors in cognitive achievement (table 5.3) and other outcomes can be attributed to differences in quality of schooling. This first section reports sector variation in key factors associated with the achievement difference—years of schooling completed, socioeconomic background, curriculum and course enrollment, and school resources. The following section presents a causal analysis of these factors.

For any given youth, the primary determinant of achievement level is quantity of schooling. This seemingly obvious factor is still often ignored by those who ask whether schooling “makes a difference.” Table 5.4 groups the 1979 cohort of American youth according to their 1981 level of educational attainment, when they ranged in age from 16-24.² At the same time the 33.3 million young persons included an estimated 4.7 million high school dropouts, 8 million currently enrolled high school students, 11.3 million terminal high school graduates, 2.8 million former college students, and 6.5 million currently enrolled college students.³

Each of these attainment groups is a sizeable and experientially very different segment of the youth population. Table 5.4 presents the mean cognitive achievement across sectors for each attainment level. The achievement score reported is a composite of four of the ASVAB subtests, representing the

Table 5.4
Mean Achievement and Age of the NLS Youth Cohort
Across Levels of Educational Attainment and School Sector

Educational attainment, 1981	School sector	AFQT	Age 1981	Population (sector %)	Estimate^a (thousands)
High school dropout	Public	49.9	19.9	97.6	4,592
	Private	51.6	19.4	2.4	111
High school enrollee	Public	65.9	16.9	92.5	7,418
	Private	72.6	16.7	7.5	599
High school graduate, no college ^b	Public	71.1	21.0	95.6	10,784
	Private	78.3	21.2	4.4	497
College, one or more years, no longer enrolled	Public	82.2	21.5	88.0	2,464
	Private	84.5	22.4	12.0	335
College enrollee	Public	85.6	20.3	87.8	5,730
	Private	87.2	20.6	12.2	794
Sector total	Public	70.3	19.8	93.0	30,988
	Private	79.5	19.9	7.0	2,336
Cohort total		71.0	19.8	100.0	33,324

a. 225,000 youth or 0.7 percent of the cohort are unclassified and omitted from total.

b. This category fully defined is high school graduate, not enrolled in college and completed no years of college.

sum of three tests reported separately in table 5.3 (Paragraph Comprehension, Word Knowledge, and Arithmetic Reasoning) and one-half the total score of a fourth subtest, Numerical Operations. This index, known as the AFQT, is the Armed Forces Qualifications Test used to screen military candidates. It has a maximum score of 105 and for this cohort a mean of 71.0 and standard deviation of 20.9.

As expected, for both sectors achievement increased linearly with quantity of schooling. College students scored almost two standard deviations (36 points) higher than high school dropouts. Somewhat surprising was that public and private youth differed substantially only at the two intermediate high school education levels of attainment. High school students and terminal graduates from the public and private sectors both differed 7 points, one-third of a standard deviation. For those who drop out of high school, or go on to college, being from a public or private high school makes a difference in achievement of less than two points, only one-tenth of a standard deviation.

This near-equivalence of sectors within three of five attainment levels must be counterposed with the fact that the cohort as a whole shows a sector difference of 9.2 achievement points. In large part, this difference reflects the tendency for private school youth to be disproportionately represented in the higher levels of educational attainment, where achievement scores are higher. Twelve percent of college students came from private high schools, compared to 7.5 percent of all those currently in high schools, 4.4 percent of terminal high school graduates, and only 2.4 percent of all dropouts. If public and private school youth were distributed the same across attainment levels (using the technique of direct standardization), the overall achievement difference between sectors would drop more than half, to 4.5 points.

But how can the remaining half of this private sector superiority be accounted for? And how can the higher attain-

ment of the private sector youth be explained? The two questions are empirically closely interrelated, and their answers are crucial for understanding the relative strengths of the two sectors. The sector difference may have little to do with the schools themselves, but rather with the differential selection of youth into the sectors. Private sector youth may be socioeconomically advantaged, with greater learning ability and more ambitious educational goals. But if relative school quality is the answer, then either private schools do a more efficient job of instruction, have more resources, or allocate resources more strictly into academic subject areas.

These three possibilities all have varying degrees of support. Private sector youth do have a strong socioeconomic advantage, as indexed by father's education and occupation. Youth in the other private schools are slightly better off than Catholic school youth. Of Catholic and other private youth, 31 percent and 38 percent, respectively, have fathers with 16 or more years of education, compared with only 16 percent of public school youth. Similarly, 61 percent and 52 percent, respectively, have fathers with white-collar jobs, compared with 39 percent of public school youth.

Private sector youth are also twice as likely as public school youth to be in a college preparatory curriculum, with Catholic sector youth slightly more so than the other private school youth. The difference is 64 percent and 52 percent, compared with 30 percent. Conversely, youth in the public sector are twice as likely as private sector youth to enroll in a vocational study program, the difference being 14 percent compared with 6 percent of Catholic youth and 7 percent of other private youth. Average differences in educational goals of the youth are equally strong. As measured in 1979 and again in 1981, relative to public school youth, the expected education of Catholic school youth was one and a half years higher, and for other private school youth was one year higher. These constitute differences of about half a standard deviation.

Differences in available resources at the schools of these youth are not ordered as uniformly across sectors as the student characteristics were. If any one sector appears to have an overall resource advantage, it would appear to be the public schools. Public school youth had an average of 1400 students in their schools, compared with 900 and 700 for Catholic and other private school youth. Their teachers' average starting salary in 1980 was 10,900 dollars, 1,900 and 1,400 more than for Catholic and other private school teachers. The sectors are about the same in teachers' degree qualifications. The other private schools, despite having the smallest enrollments, have libraries averaging almost as large as in the public schools. Other private school youth had access to libraries averaging 16,400 volumes, compared with 16,700 volume libraries in public schools and 11,500 volume libraries in Catholic schools. By contrast, the private schools offered extremely limited vocational opportunities. Of seven vocational programs examined (agriculture, business, distributive education, health, home economics, trade, and technical), business was the only one available to at least half the other private sector youth. Catholic schools were little better, with business and home economics the only programs available to a majority. In the public schools, six of the seven programs were available to at least half the youth. It does appear that the difference between sectors is less a matter of total resources than of resource allocation.

The final comparison pertaining to educational quality examines the academic records of youth who graduated from the college preparatory track of their high schools. Of interest is whether college preparatory programs might be more rigorous in the private schools, in terms of students taking more academic courses and being graded more competitively. This information came from a survey in 1980 of students' final high school transcripts (Campbell, Orth, and Seitz 1981). Credits received during grades 9-12 in the five main academic subject areas—English, mathematics,

science, social studies, and foreign language—were coded using the Carnegie credit-unit system, based on one-hour, one-year courses receiving 1.00 credit.

Moderate differences do exist across sectors in the college preparatory curriculum taken by the graduating youth. Overall, Catholic sector youth took one more credit hour of academic coursework than public youth did, and other private school youth took one-half more credit hour. The largest differences were in social studies and foreign languages, with slight differences in English and no significant difference in either mathematics or science. Correspondingly, Catholic and other private sector youth were graded more rigorously, with Catholic sector youth being assigned the lowest grades overall, averaging a quarter-point lower than public school youth, based on a four-point grade scale.

These sector differences in college preparatory coursework lend some slight credence to the educational quality explanation of the higher achievement scores of private sector youth. Translated into a time metric, the average difference of one college preparatory course unit between Catholic and public sectors is a difference of 4 percent of the total high school class time. Compared to coursework differences between curriculum tracks, however, this is at most marginal. For youth from all sectors the average college preparatory course load over grades 9-12 is 16 credits, or four academic courses per year. This means two-thirds of students' total course time is spent in academic courses. By contrast, public sector youth in general and vocational programs average only 11.7 and 10.8 academic course units, respectively, i.e., they spend less than half their class time taking academic courses.⁴ This average disparity of more than four course units means general and vocational students spend at least 17 percent less of their total high school hours in academic courses than their college preparatory counterparts.

If quantity of schooling affects cognitive achievement, as we see it did in the case of years of schooling, and cognitive achievement is parents' primary goal for their child, it would seem that the consumer decision to enroll one's child in a college preparatory curriculum is probably going to promote learning more efficiently than would a decision to move the child out of the public sector completely. The next section will estimate the relative gain that can be expected from either of these decisions.

III. Sector and Curriculum Effects

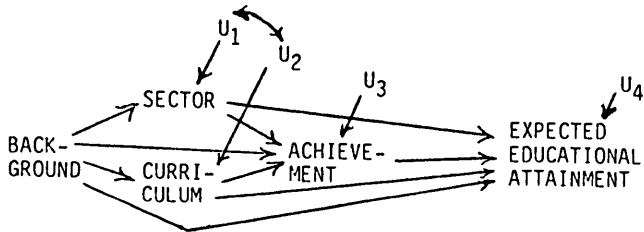
Figure 5.1 presents the causal model used to estimate joint sector and curriculum effects on achievement and college plans, net of background characteristics. The full model is a recursive four equation system. Sector and curriculum enrollment are each determined by a vector of background variables. No causal relationship between the two schooling choice variables is specified other than their joint background determination and correlated residual variation. Achievement is dependent on the background vector, sector, and curriculum enrollment. Expected educational attainment in turn is dependent on these prior variables and achievement. Only the last two equations are estimated in this chapter. Other educational outcomes to be analyzed with these equations include selected vocational achievement scores and ratings of quality of school life.

This relatively simple model is consistent with both the standard status attainment model of sociologists (Blau and Duncan 1967; Sewell, Hauser, and Featherman 1976) and the education consumption approach presented earlier. The attainment model posits schooling as the primary intervening mechanism converting and altering an individual's origin status into destination status. Usually destination status is represented by the adult respondent's educational attainment, occupation, and earnings, origin status by parents'

education, occupation, and income, and the individual's preschooling ability level. A social psychological variable, called either significant other's influence or parental encouragement, is also included to capture the impact of differential parental ambition, values, and related factors in mediating the influence of these origin status variables on schooling outcomes. A second social psychological variable, referred to as educational aspirations or expected educational attainments, mediates the outcomes of secondary schooling on final educational attainment.

Figure 5.1
A Causal Model of Sector and Curriculum Effects
on Educational Outcomes

Basic causal model:



Reduced-form estimation equation:

$$\begin{aligned}
 EDEXP = & aACH + \sum_{i=1}^2 b_i SEC + \sum_{i=1}^3 c_i CUR + dSOI + \sum_{i=1}^4 e_i INC + \\
 & \sum_{i=1}^6 f_i MED + \sum_{i=1}^6 g_i FED + \sum_{i=1}^2 h_i MOC + \sum_{i=1}^2 j_i FOC + kSIB \\
 & + lREL + \sum_{i=1}^2 m_i ETH + nAGE + oRES + \sum_{i=1}^8 p_i REG + q
 \end{aligned}$$

From this status attainment perspective, the model in figure 5.1 evaluates the extent to which school sector and curriculum mediate the effects of origin status on the two proximate causes of destination status, academic achievement and expected educational attainment. Their having sizeable effects on the two educational outcomes net of origin status, together with their strong linkage to origin status (as shown in the previous section), would indicate their importance in transmitting social inequality across generations. Alternatively, from the perspective of a household consumption approach, the equations permit an assessment of the production efficiency of parents' expending their resources on either a private high school education or a college preparatory curriculum in order to maximize their children's human capital. The relative value of these two educational policy choices for optimizing various noneconomic attitudinal returns may also be assessed.

Table 5.5 presents the means and standard deviations for all variables used in the achievement and expected attainments equations. The fourteen explanatory variables include the two schooling variables, nine background variables, and three control variables. The background variables are family income, mother's and father's education, mother's and father's occupation, number of siblings, significant other's influence, religion (Catholic or other), and ethnicity (black, Hispanic, or white).⁵

The three control variables included are residence (urban or rural), region (one of the nine Census regions), and age. Although they are not theoretically central to status attainment or to education consumption, the possible effects of these control variables are of substantive interest; and because they correlate with the other background variables, deleting them would bias the estimated effects of these variables.⁶

Table 5.5
Means and Standard Deviations for Variables in Basic Model
of Secondary School Sector Effects
NLS Youth Aged 14-17 in 1979

Variable	X	S.D.
EDEXP	13.96	2.43
AFQT	68.34	20.03
SECTOR (PUB):		
CATH	.035	.185
OTHER	.028	.166
CURR (GEN):		
COLL	.315	.464
VOC	.133	.340
SOI	2.97	.912
INCOME (0-5):		
5-10	.116	.320
10-20	.247	.431
20+	.400	.490
MOEDUC (0-6):		
7-11	.256	.436
12	.453	.498
13-15	.106	.308
16	.075	.263
17-20	.024	.154
FAEDUC (0-6):		
7-11	.234	.423
12	.333	.471
13-15	.105	.307
16	.105	.306
17-20	.072	.259
MOOCC (NOEMP):		
BCOCC	.256	.436
WCOCC	.275	.447
FAOCC (NOEMP):		
BCOCC	.445	.497
WCOCC	.302	.459
SIBS	3.23	2.23
RELIG (OTHER):		
CATH	.321	.467
ETHN (WH):		
BLACK	.140	.347
HISP	.052	.222

Table 5.5 (continued)

Variable	X	S.D.
AGE	15.58	1.08
RESID (RUR):		
URB	.772	.419
REGION (PAC):		
N ENG	.054	.226
MATL	.155	.362
SATL	.177	.382
ESC	.065	.246
WSC	.082	.275
ENC	.238	.426
WNC	.074	.262
MTN	.048	.214
NA-CURR	.023	.150
NA-INC	.182	.386
NA-MOED	.047	.212
NA-FAED	.100	.299

N = 4832.

One potentially biasing omission from the vector of background variables is a measure of ability. According to CHK's critics, their failure to control for the probable higher ability of the more selective private school students biased upward their sector effect estimates. This possibility was analyzed on a 20 percent subsample of NLS youth who had at least one intelligence test score available in their high school records. A composite I.Q. index was constructed by taking the first recorded of seven possible intelligence test scores. Scores from the different tests were equilibrated by conversion to national percentiles.⁷

For the achievement equation, addition of the I.Q. index to the background vector uniformly decreased all background and schooling estimates to approximately two-thirds their original size. This reduction reflects the fact the

I.Q. index had a zero-order correlation of .704 with the AF-QT score and moderate correlations with all background variables. Whether these reduced estimates are less biased, however, is by no means certain. The age at which each available intelligence test was administered was variable, but in most cases occurred well into the youths' schooling careers. Two-thirds of the available tests were taken in grades seven through ten, the modal year being grade nine. CHK have argued (1982: 165) that such school-age intelligence tests possess a strong achievement component, and therefore leave unanswered the question of whether such tests measure ability or simply prior achievement. If the latter, the reduced size of the estimated coefficients when the index is in the equation would simply reflect the consistently more modest effects of each variable on achievement *gain* as opposed to achievement *level*. But more important, even if the I.Q. index were a valid ability measure, a nearly uniform one-third adjustment in the size of the coefficients would not alter our overall conclusions on the relative importance of the sector and curriculum effects. Consequently it was decided to leave the estimates unaltered, as presented in table 5.6.

For these schooling equations, the sample has been restricted to the half of the youth cohort who were of school age, 14-17.⁸ Eleven of the explanatory variables are expressed in either single or multiple series dummy variable form, and in each case the referent category is denoted in parentheses after the variable name in the table. Eight of these are natural categoric variables. Three interval variables, mother's and father's education and family income, were categorized mainly to permit the inclusion of a no answer category for each, thereby minimizing case loss due to missing data.

This basic model fits the data well.⁹ The OLS-estimated equation explains 44 percent of the variation in youth cognitive achievement and 48 percent of the variation in ex-

Table 5.6
Coefficient for Basic Model of Secondary School Sector Effects
on Years of Expected Education and Achievement (AFQT)
of NLS Youth Aged 14-17 in 1979

Explanatory variable	AFQT		ED EXP	
	b	t	b	t
SECTOR (PUB): CATH	.528	.43	.344	2.61
OTHER	-1.844	-1.39	.140	.97
CURR (GEN): COLL	9.14	17.43	1.053	17.95
VOC	-.271	-.40	-.058	-.79
SOI	1.615	6.42	.544	19.76
INCOME (0-5): 5-10	1.720	1.54	.208	1.71
10-20	5.667	5.35	.415	3.60
20+	7.263	6.71	.416	3.52
MOEDUC (0-6): 7-11	3.435	2.59	.126	.88
12	6.284	4.61	.381	2.57
13-15	8.281	5.48	.779	4.73
16	9.572	5.90	.801	4.54
17-20	14.08	7.02	1.089	4.98
FAEDUC (0-6): 7-11	3.526	3.02	-.083	-.65
12	5.693	4.81	-.082	-.63
13-15	7.685	5.77	.168	1.15
16	10.51	7.54	.534	3.50
17-20	11.52	7.63	.789	4.77

Table 5.6 (continued)

Explanatory variable		AFQT		ED EXP	
		b	t	b	t
MOCC (NOEMP):	BCOCC	.497	.91	-.092	-1.55
	WCOCC	1.181	2.14	.088	1.47
FAOCC (NOEMP):	BCOCC	-.991	-1.68	-.095	-1.48
	WCOCC	1.01	1.46	-.017	-.22
SIBS		-.689	-6.51	-.025	-2.16
RELIG (OTHER):	CATH	.724	1.36	.100	1.73
ETHN (WH):	BLACK	-15.06	-20.93	.869	10.64
	HISP	-6.485	-5.67	.603	4.83
AGE		2.033	10.04	-.089	-4.00
RESID (RUR):	URB	-1.423	-2.67	.192	3.32
REGION (PAC):	N ENG	2.502	2.14	-.048	-.38
	MATL	-.107	-.12	-.046	-.49
	SATL	-.573	-.66	.060	.64
	ESC	-2.449	-2.22	.215	1.79
	WSC	-.116	-.12	-.023	-.21
	ENC	1.070	1.31	-.076	-.86
	WNC	4.462	4.27	-.043	-.38
MTN	.726	.61	-.321	-2.49	

AFQT	-	-	.035	22.46
NA-CURR	-13.71	-9.28	-1.398	-8.57
NA-INC	4.750	4.29	.461	3.83
NA-MOED	-.357	-.22	.161	.92
NA-FAED	2.127	1.68	-.089	-.64
CONSTANT	17.43		10.04	
\bar{R}^2	.444		.483	
n	4,832		4,819	

pected educational attainments. The vector of seven background variables measuring origin status had its expected strong effect on both cognitive achievement and expected years of education. Only father's and mother's occupational position, broadly categorized into the three-fold division of blue-collar, white-collar, or unemployed/out-of-labor force, failed to have an independent effect net of the other variables. The linearity of the parents' education and family income effects is especially striking, as is the strong effect of the social psychological mediator of these origin status effects, significant other's influence.

The five control variables have mixed effects. Being of Catholic origins in itself has no effect on achievement or expectations, and age raises achievement levels and reduces expectations. By contrast, being a member of a disadvantaged minority, either black or Hispanic, strongly lowers achievement and raises expectations. Residing in an urban location also reduces achievement and raises expectations, but only slightly. Finally, the eight dummy variable coefficients measuring regional variation indicate that the regional variation on these two educational outcomes is accounted for reasonably well by the variables already in the equation. Youth from the New England region have the highest observed achievement scores, those from the East South Central the lowest. Net of all other variables in the equation, however, the observed difference between these two extreme regions drops from 13 points to 3 points (see appendix to this chapter).

The two schooling effects were assessed in the context of these background and control variable effects. Table 5.6 indicates that net of the origin status and other control factors, being in a college preparatory instead of general curriculum added an average of 9 points to a youth's total cognitive achievement score. Being in a Catholic or other private school made no difference in achievement scores, the non-

significant net increment over public schools being .5 for the Catholic and -1.8 for the other private sector. There was a small but significant effect of Catholic sector on expected years of education. Being in the Catholic sector instead of the public added a net average of one-third year more to a youth's expected education. By contrast, being in the other private sector made no significant difference. Being in the college preparatory curriculum added an average of one full year of expected education.¹⁰ The clear conclusion is that being in the college preparatory curriculum of *any* sector is much more critical than sector itself for maximizing these two educational outcomes.

Before accepting this conclusion, several additional analyses were performed. First the analyses were repeated on the older half of the cohort, those who in 1979 were age 18-22. If sector differences appeared in the post-high school years, some type of "sleeper effect" process could be at work, wherein youth in private schools developed study skills or received character training that enabled them to perform better after high school. Table 5.7 shows the two equations reestimated for this older group. The basic model is the same except for the omission of significant other's influence, which is not measured for this age group; for comparison purposes, the 14-17 age group equations were reestimated without significant other's influence. The older youth showed the same basic pattern of effects as the younger, except that the significant effect of Catholic sector on expectations became nonsignificant. The only evidence of a "sleeper effect" is for youth who were in a vocational training program. Having been from such a program gave the older youth a small but significant 3-point achievement advantage over general curriculum youth. Youth in the 14-17 age category, however, showed a nonsignificant achievement disadvantage from vocational training of -.2 points.¹¹

The next analysis examined the possibility that estimations made for the total youth population may have concealed

Table 5.7
Secondary School Sector Effects on Achievement (AFQT)
and Expectations Estimated from Basic Model for 14-17 and 18-22 Age Cohorts^a

Explanatory variable	18-22, no SOI		14-17, no SOI		14-17	
	b	t	b	t	b	t
AFQT						
SECTOR (PUB): CATH	.831	.83	.748	.62	.528	.43
OTHER	1.050	.88	-1.908	-1.45	-1.844	-1.39
CURR (GEN): COLL	11.382	22.82	9.803	19.20	9.143	17.43
VOC	3.121	5.62	-.216	-.33	-.271	-.40
SOI	-	-	-	-	1.615	6.42
AGE	1.506	9.32	1.929	9.72	2.033	10.04
R ²	.450		.442		.444	
n	6,048		5,094		4,832	
EDEXP						
SECTOR (PUB): CATH	.206	1.82	.366	2.70	.344	2.61
OTHER	.254	1.89	.170	1.15	.140	.97
CURR (GEN): COLL	1.231	21.08	1.211	20.47	1.053	17.95
VOC	.074	.12	-.181	-2.44	-.058	-.79
SOI	-	-	-	-	.544	19.76
AFQT	.045	31.23	.038	24.10	.035	22.46
AGE	-.010	-.54	-.130	-5.79	-.089	-4.00
R ²	.469		.444		.483	
n	5,990		5,078		4,819	

a. Coefficients for other variables in full equation (see table 5.6) not presented.

significant sector effects for major subgroups of youth. Table 5.8 presents the sector and curriculum effects estimated from the basic model separately for blacks, Hispanics, and whites. The consistency of the college preparatory curriculum effect across subgroups was striking. Taking college preparatory courses helps blacks, Hispanics, and whites about equally, in both achievement and expectations. The net achievement gain over the general curriculum ranges from 7 to 10 points, and the net gain in average expected years of education is one year. The sector effects, on the other hand, are highly unstable across subgroups. The small gain in educational expectations from being in the Catholic sector holds only for white youth. There were no sector effects for black youth, but two suggestive sector effects did appear for Hispanics. Being in Catholic schools raised their achievement scores 7.6 points over public schools, and attending other private schools raised their years of expected education 1.2 years.

In considering the meaning of this Hispanic private sector effect, the first possibility that comes to mind is that the private schools Hispanics attend may do a better job than public schools in dealing with the special verbal needs of Hispanic students. Secondly, the religious instruction in Catholic schools may be an important cultural bridge linking home values with school work. The greater need for this home-school link for Hispanics is suggested by the absence of a significant other's influence effect on achievement for them, compared to strong effects of this variable for both blacks and whites. In order to investigate further the verbal needs explanation, the total achievement score was disaggregated into its four subtest components and the achievement equation was reestimated for each subgroup for each subtest. The sector effect results for each equation are summarized in table 5.9. Note that summing the sector effect for each subtest, using the weighting formula in this table footnote, perfectly reproduces the total AFQT sector effect

Table 5.8
Secondary School Sector Effects on Achievement (AFQT)
and Expectations Estimated from Basic Model
Separately for Black, Hispanic, and White Youth Aged 14-17^a

Explanatory variable	Black		Hispanic		White	
	b	t	b	t	b	t
AFQT						
SECTOR (PUB): CATH	1.025	.30	7.588	2.37	.300	.20
OTHER	-6.327	-1.93	6.097	1.52	-1.795	-1.08
CURR (GEN): COLL	10.017	9.70	7.055	4.68	9.159	13.49
VOC	2.294	1.88	1.811	.95	-.748	-.85
SOI	1.890	4.03	.940	1.31	1.564	4.75
$\overline{R^2}$	.291		.300		.339	
n	1,276		674		2,882	
EDEXP						
SECTOR (PUB): CATH	-.179	-.43	.289	.82	.382	2.38
OTHER	.097	.25	1.184	2.61	.068	.39
CURR (GEN): COLL	1.026	7.93	1.112	6.56	1.050	14.13
VOC	.098	.67	.057	.27	-.079	-.84
SOI	.419	7.33	.557	6.99	.567	16.11
AFQT	.033	9.60	.043	9.73	.035	17.42
$\overline{R^2}$	.341		.433		.512	
n	1,275		671		2,873	

a. Coefficients for other variables in full equation (see table 5.6) of basic model not presented.

Table 5.9
Secondary School Sector Effects on the Four Subtests of the AFQT Score
for Black, Hispanic, and White Youth Aged 14-17^a

Subgroup	Sector effect	Subtest					n
		Word know.	Parag. comp.	Arith. reas.	Num. oper.	Total AFQT ^b	
BLACK	CATH	1.441	-.524	.300	-.385	1.025	1276
	OTHER	-2.400	-1.756*	-.191	-3.962	-6.327	
	$\overline{R^2}$	.276	.206	.139	.182	.291
HISP	CATH	3.409*	1.467*	1.594	2.236	7.588*	674
	OTHER	4.181*	1.426	-.478	1.937	6.097	
	$\overline{R^2}$	.279	.236	.210	.181	.300
WHITE	CATH	.317	-.076	-.777	1.674	.300	2882
	OTHER	.241	-.448	-.085	-3.005*	-1.795	
	$\overline{R^2}$	.295	.242	.242	.199	.340
TOTAL	CATH	.530	-.044	-.618	1.319	.528	4832
	OTHER	.201	-.484	-.134	-2.855*	-1.844	
	$\overline{R^2}$	.404	.323	.332	.260	.444
	$\overline{Y_{TOT}}$	24.41	10.42	16.88	33.25	68.34	
	S.D. TOT	7.46	3.46	7.05	10.55	20.03	

*p .05.

a. Coefficients for other variables in full equation of basic model (see table 5.6) not presented.

b. AFQT = W.K. + P.C. + A.R. + 1/2 N.O.

presented in the right column. These findings confirm the expectation that it is the verbal component of achievement that is most aided by Hispanics' private school enrollment. Sector enrollment has no effect on Hispanic scores in arithmetic reasoning or numerical operations. Being in Catholic schools significantly increases Hispanics' word knowledge and paragraph comprehension scores, and other private sector enrollment also increases their word knowledge scores. No similar pattern holds for the disaggregated scores of black or white youth.

The final analysis of subgroup variation in sector effects substituted vocational achievement for cognitive achievement as the dependent educational outcome. Table 5.10 reports the sector effects for each subgroup on the four vocational subtests from the ASVAB battery—mechanical comprehension, auto and shop information, electronics information, and coding speed. The expectation was that attending a private school would reduce vocational achievement, given the relative absence of vocational training opportunities there. Even after taking into account sector differences in vocational curriculum enrollment, the private school college preparatory and general curriculum youth have fewer opportunities for vocational course electives compared to what is available to their public school counterparts.

The coefficients in table 5.10 indicate a generally consistent pattern of small negative effects of the private sector on vocational achievement. Only 4 of the 24 separate sector effect coefficients are significant, but all 4 show a negative private sector effect. This effect is strongest for white youth, for whom Catholic sector enrollment significantly reduces scores in mechanical comprehension, automobile information, and electronics information. For automobile information only, the coefficients for Catholic and other private sector are negative across all three subgroups. For mechanical comprehension, Catholic sector coefficients are also negative for all three subgroups. Electronics information, which is

Table 5.10
Secondary School Sector Effects on the Four Nonacademic Achievement Tests
for Black, Hispanic, and White Youth Aged 14-17^a

Subgroup	Sector effect	Subtest				n
		Mech. comp.	Auto. info.	Elec. info.	Coding speed	
BLACK	CATH	-.034	-.731	-.570	1.222	1276
	OTHER	.391	-.932	.356	-6.154*	
	$\overline{R^2}$	.095	.109	.112	.151
HISP	CATH	-1.003	-1.214	.491	4.456	674
	OTHER	.221	-1.676	.142	2.697	
	$\overline{R^2}$	.142	.180	.163	.138
WHITE	CATH	-1.123*	-1.300*	-.912*	-.263	2882
	OTHER	-.460	-.467	.315	-1.626	
	$\overline{R^2}$	.135	.098	.149	.140
TOTAL	CATH	-1.068*	-1.262*	-.842*	.084	4832
	OTHER	-.383	-.572	.332	-1.806	
	$\overline{R^2}$	.250	.231	.250	.205
	\overline{Y}	13.29	12.75	10.35	43.02	
	S.D.	4.99	5.06	4.07	15.16	

*p .05.

a. Coefficients for other variables in full equation of basic model (see table 5.6) not presented.

less “manual” and can be learned in academic as well as vocational settings, has the least consistent pattern of sector coefficients.

IV. Quality of School Life

These findings strongly suggest that increased federal support of private schooling, whether by means of tax credits or some other scheme, will not advance the level of learning among American youth. With the important exception of the Catholic sector effect on verbal achievement of Hispanic youth, enrollment in private schools has no significant net effect on cognitive achievement. What does matter is taking college preparatory courses, and one need not attend private schools to do so. In fact, one could claim that the only justification for federal support of private schooling would be to remedy its deficiencies, particularly in vocational training. From the standpoint of the parent-consumer of education, choice of sector is not a crucial factor in human capital development—choice of curriculum is.

Correspondingly, these findings suggest that in the context of the status attainment model of American society, private schooling is not, and has no special potential for becoming, an important mechanism for fostering social mobility. The degree of social advantage possessed by each youth is not likely to be significantly altered by choice of sector enrollment, however much it may currently determine that choice. By contrast, the uniformly strong effects of curriculum enrollment on schooling outcomes confirms previous studies (e.g., Alexander and McDill 1976; Rosenbaum 1980) which have found this variable to be strongly implicated in the status attainment process.

Why then does the belief in the superiority of private education persist, both among key policymakers and some of the American public? If one assumes, as economists do, that these educational “producers” and “consumers” tend

to be rational, and that "bad information" alone is not the answer, there must exist some "nonpecuniary factors" instead of human capital formation that are being optimized by private schooling. Speculation on what the full spectrum of nonpecuniary factors could be is beyond the scope of this report, but one such factor is a general subjective state of well-being, sometimes called "quality of school life" (Epstein 1981). For many parents, the belief that private schools provide an immediate life quality superior to that in public schools might be sufficient justification to expend available income for private school tuition. In order to examine the plausibility of considering the private sector as the best bet for this "nonpecuniary" optimization, six quality of school life indicators were regressed separately on the 14 variables of the basic model. This specification treats general well-being as an attitudinal outcome of schooling parallel to, but very different from, the human capital variable, expected years of education.

The six indicators represent the youths' ratings of the high schools they attended on aspects of school life central to their general well-being—instructional quality, school discipline, learning freedom, personal safety, job counseling, and peer relations.¹² Similar ratings have been used quite differently by CHK, following a long tradition of "school climate" research (e.g., Coleman 1961; McDill and Rigsby 1973). This line of inquiry hypothesizes that these individual attitudes aggregated over the student population of a school constitute the prevailing school climate, which in turn is a key determinant of the academic performance level at the school. The fact that the climate-performance hypothesis has yet to receive any convincing empirical support (Hauser 1970, 1974; Goldberger and Cain 1982) reinforces the theoretical decision to use the ratings only as outcome variables.

Consistent with our previous findings, here we find that being in the college preparatory rather than general cur-

riculum significantly increased all six quality of school life ratings (table 5.11). In addition, being in the vocational curriculum significantly raised ratings on three of the dimensions—instructional quality, learning freedom, and job counseling. But unlike the achievement or expected education findings, all six quality of school life ratings were also significantly affected by sector enrollment. Youth in private schools, net of all background and curriculum enrollment effects, rated more highly than public school youth the quality of their class instruction and strictness of discipline, and slightly more highly their personal safety and friendship opportunities at school. They rated lower than public school youth their degree of learning freedom and opportunities for job counseling.

These sector and curriculum effects on life quality occurred in the nearly complete absence of significant effects from cognitive achievement, the other key schooling variable in the equation. High performing youth tended to rate their personal safety higher, but otherwise youth performance levels were unrelated to their life quality ratings. This contrasts with the strong effect achievement had on the human capital variable, expected years of education.

Some definite nonpecuniary gain is derived from private sector enrollment—the quality of school life is better. Insofar as quality of school life bears the hypothesized relation to youths' subjective state of well-being, this advantage cannot be minimized. Except for Hispanics, however, beliefs about the superiority of private education should be restricted to this domain. Federal policymakers and parents who contemplate investment in private secondary education need to know they will be optimizing student life quality, not learning. Efforts to improve the quality of student life in public schools might be an even sounder investment.

Before proposing any policy interventions, however, further research is needed to determine the range of factors con-

Table 5.11
Secondary School Sector Effects on Six Quality of School Life Ratings
Estimated from Basic Model for Youth Aged 14-17 in 1979^a

Explanatory variable	Instructional quality		School discipline		Learning freedom	
	b	t	b	t	b	t
SECTOR (PUB):						
CATH	.162	4.13	.494	7.36	-.434	-6.71
OTHER	.298	6.97	.442	6.04	-.183	-2.60
CURR (GEN):						
COLL	.142	8.20	.070	2.36	.139	4.87
VOC	.069	3.15	.050	1.34	.141	3.94
SOI	.041	5.01	.032	2.25	.020	1.45
AFQT	-.000	-.26	-.002	-1.93	.000	.16
	Personal safety		Job counseling		Peer relations	
	b	t	b	t	b	t
SECTOR (PUB):						
CATH	.112	1.75	-.148	-2.07	.111	2.11
OTHER	.195	2.77	-.301	-3.80	.080	1.40
CURR (GEN):						
COLL	.085	2.97	.151	4.74	.054	2.33
VOC	.043	1.19	.232	5.81	-.020	-.67
SOI	-.014	-1.00	.010	.65	-.008	-.70
AFQT	.007	8.70	.001	1.04	.001	1.48

a. Coefficients for other variables in full equation (see table 5.6) not presented.

tributing to the higher quality of life in private schools. Some of these may not be easily transferable to public schools. One of these is the aura of elitism. For example, the label of private school student may in itself convey a sense of privilege and speciality over public school students, causing these youth to attribute a high value to their school life irrespective of its actual quality. Elitism is a psychic resource which, by definition, cannot be widely distributed. Public school systems would only suffer further budgetary problems if parents believed this elitism could be purchased by adding further amenities to their facilities. The democratization of private school enrollment through a tuition tax credit plan might reduce elitism, but would thereby also diminish the value of private schools for many consumers. An alternative to planned democratization of private schools is the natural leveling influences of American popular culture, where symbols of elitism eventually tend to be diffused throughout mainstream society and thereby deflated. A current public high school fad is the "preppy" subculture, wherein students mimic through dress and mannerisms the life style of the private boarding school student.¹³

A related characteristic of many private schools is their greater sense of tradition, and in the case of Catholic and other religious schools, their sacred character. Neither feature can be easily reproduced in public schools, however important they are for quality of student life and general well-being. Constitutional requirements forbid the observance of religion in public schools, and the rapid pace of public school social change and instructional innovation over the past decade has eroded much of the tradition in public school life. As Shils (1981) has argued, the presence of tradition can be crucial in providing a normative ordering that counterbalances the excessive rationalization of modern society. Tradition defines the "natural" way to do things, representing the accumulation of experience tested over time. Informal student folklore, rituals, and formal teacher-

student ceremonies operate in place of legalistic student codes of conduct to guide student behavior, providing an interpretive context for the experience of schooling. Waller (1932) has similarly emphasized the importance of tradition in the early-century public high schools.

In addition to normative regulation, school traditions often evoke imagery of past greatness, a heritage of accomplishment worthy of emulation and preservation for future generations of students. Individual striving serves the corporate "student body" extended through time. The existence of an honor roll or portrait gallery of distinguished alumni and former teachers, even the display of athletic trophies dating back to the early history of the school, can add to the quality of life of students. The veneration of past greatness fosters a sense of sharing in this greatness. On the other hand, excessive worship of the past can be a form of escapism that stifles individual freedom and innovation, making youth poorly adapted to the continuing rapid pace of social change in modern society. Learning to cope with the greater social strains, impersonality, and bureaucracy of public school life may be better preparation for the realities of adulthood. These are issues which must be resolved through further research and debate. The present analysis has shown that the substantial sector difference in quality of student life is *not* coupled with any strong sector differences in quantity of learning.

Appendix to Chapter 5 Analysis of Regional Variation

Table 5A.1 shows the regional mean values in achievement and expectations before and after taking into account all the explanatory variables in the basic model. The analysis was restricted to public school youth because of region-specific sample size limitations. Preliminary analyses of the total sample revealed no significant region by sector interaction effect; hence these results should generalize to the private school sector. The expected regional means were calculated by substituting into the regression equations of the basic model region $i = 1$ and $j = 0$ if $i \neq j$ and the means of all other variables in the equation.

Table 5A.1
Observed and Adjusted Regional Mean Values of Achievement (AFQT)
and Expected Education (Years) for Public Sector Youth
Aged 14-17 in 1979

Region	Achievement		Expectations	
	Observed	Adjusted	Observed	Adjusted
New Eng.	75.28	69.96	14.55	13.94
Mid. Atl.	68.46	67.07	14.00	13.88
S. Atl.	62.10	66.99	13.64	13.90
E.S. Cen.	60.66	64.78	13.52	14.16
W.S. Cen.	61.91	67.03	13.76	13.93
E.N. Cen.	70.05	68.78	13.84	13.88
W.N. Cen.	73.76	71.66	14.03	13.92
Mtn.	68.28	68.08	13.45	13.61
Pac.	67.72	67.60	14.00	13.95
U.S. total	67.90	67.91	13.93	13.92
S.D.	20.06	-	2.24	-

Looking first at the unadjusted means, public school youth from the three southern regions (South Atlantic, East South Central, and West South Central) average 9 points lower in achievement than youth from the two eastern regions (New England and Middle Atlantic), 10 points lower than youth from the two North Central regions (East and West), and 6 points lower than youth from the two western regions (Mountain and Pacific). If youth were equivalent across regions on all explanatory variables entered in the model (except of course region), these regional differences would become negligible. Looking now at the adjusted regional means, southern youth would differ from eastern youth only 2 points, from north central youth 4 points, and from western youth 2 points.

The basic model also explains most of the regional variation in expected years of education. Clustering the nine census regions into the same four areas, the maximum difference between any two areas of .7 years drops to .2 years after adjustment on the explanatory variables.

NOTES

1. Starting with an estimate that the public school attrition due to dropouts is double that in the private schools, CHK employ an ad hoc adjustment procedure which reduces the across-grade raw differences in achievement scores approximately twice as much for public as for private students. However plausible, there is no way to validate this radical adjustment procedure with the HSB data alone. Because of other serious problems with this "learning growth" approach, particularly its failure to control for test ceiling effects which would bias the growth estimates for initial high-scoring students, no effort has been made here to replicate this particular analysis.
2. The January 1, 1981 age range was 16-23, but as interviews were conducted between the beginning of the year and the spring, some youth were 24 at time of interview.
3. Former students completed one or more years of college and were no longer enrolled. 53.8 percent completed one year only, 27.1 percent completed two or three years, and 19.1 percent completed four or more years of college.
4. Similar track differences appear to hold in the other two sectors, but sample size limitations make the estimates unreliable.
5. Significant other's influence is a four-point scale of perceived degree of approval with a decision not to attend college by the person selected as the most important influence in one's life. High score signifies strong disapproval, i.e., encouragement to attend college. Of the four largest categories of persons chosen, 67 percent were parents, 14 percent friends, 10 percent other relatives, and 3 percent teachers or counselors.
6. One other possible control variable, sex, was uncorrelated with the other explanatory variables, hence its omission had to impact on the other variables estimates. Product terms introduced to test for a possible sex by sector interaction effect were nonsignificant and so were also dropped from the equation.
7. The intelligence tests used, in order of frequency, were the Otis-Lennon, Differential Aptitude, California Test of Mental Maturity, Lorge-Thorndike, Henmon-Nelson, SCAT, Kuhlman-Anderson, Stanford-Binet, and Wechsler.

8. Besides the greater theoretical relevance and comparability with the HSB sample of this age segment, one key variable, significant other's influence, was not measured for the over 17 age group, and the income variable for some members of this older age group signifies the respondent's own destination status income rather than origin status, family income.

9. In addition to this model, results were obtained using two alternative analysis strategies, each of which more closely represented key features of the original design for CHK. For both theoretical and methodological reasons, however, neither was considered preferable to the one reported in the text. One estimated separate production function equations for each sector, and then compared their relative impact by means of component analysis (Althausser and Wigler 1972). The other treated curriculum as a mediator of the sector variable, in a fully recursive structural equations model. Following the conventions of path analysis (Alwin and Hauser 1975), the relative effects of sector and curriculum were then assessed in terms of their total, direct (unmediated), and indirect (mediated) effects. What is important to note here is that results so obtained did not alter any of the substantive conclusions reported in the text.

10. In evaluating the size of these schooling effects, caution must be exercised in taking too literally the absolute values of the coefficients. These values are useful more as a common metric for interpreting the *relative* importance of the different effects.

11. A variety of interpretations for this apparent paradox are possible; for example, it may be that vocational training qualified these youth for cognitively complex post-high school work activity that fostered further cognitive achievement.

12. Instructional quality is a composite of four items: "my schoolwork requires me to think to the best of my ability," "most of my classes are boring," "most of my teachers really know their subjects well," "most of my teachers are willing to help with personal problems." The rest are single item indices—"you can get away with almost anything at this school" (school discipline); "at this school, a person has the freedom to learn what interests him or her" (academic freedom); "I don't feel safe at this school" (personal safety); "this school offers good job counseling" (job counseling); and "it's easy to make friends at this school" (peer relations). All items are coded so a high score corresponds to the variable direction implicit in its label.

13. See Lisa Birnbach, ed., *The Official Preppy Handbook*, New York: Workman, 1980. Ironically, this best-seller among youth advocates the same hedonistic values and disdain of personal achievement which Coleman viewed so critically in his original (1961) study of American high school life.

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