

## **The Economics of Education: Some Lessons from Sociology**

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## *I. Introduction*

The economics of education predominantly regards the return to schooling, its opportunity cost, and discount rates as the key variables determining students' behavior.<sup>1</sup> Economists often append social interactions to their research, but rarely do they provide a theoretical framework for the nature of the social interaction. This paper culls the non-economic literature on education – by sociologists, anthropologists, reformers, and practitioners – to present a theory of student behavior that integrates the sociological view of education with economic analysis. In this theory, the primary motivation of children and adolescents comes from their self-image and the extent to which they integrate into their school's social environment: Children want to be successful children (Harris [1998]), and adolescents want to “fit in” (Coleman [1961]). This paper reviews and interprets the non-economic literature and translates the descriptions and consequences of these motivations into an economic framework.

A series of models gives focus to our review and characterization of the economic and sociological literature. Our modeling of what we call, collectively, the “sociological” view of education uses our previous work on identity (Akerlof and Kranton [2000] ), which advances a notion of utility where an individual's identity, or sense of self, is salient. An individual gains utility when her actions and those of others enhance her *self-image*. Furthermore, self-image, or *identity*, is associated with the social environment: People think of themselves and others in terms of different *social categories*. Examples of social categories include racial and ethnic designations, and in the school context include, for example, “jock” and “nerd.” *Prescriptions* give the *ideal*, or stereotypical physical attributes and

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<sup>1</sup> We review the economic literature below.

behavior, of people in each category. Individuals then gain or lose utility insofar as they belong to social categories with high or low social status and their attributes and behavior match the ideal of their category.

We interpret sociological thinking in education in terms of student *identities*, the *social categories* to which students ascribe, and the *prescriptions* and *ideals* of those social categories. This vocabulary reflects fundamental concepts in sociological and anthropology, and thus brings together the economics and the sociology of education into a single framework.

In this introduction we first give an overview of the salient non-economic literature on education and describe our interpretation of this literature. We then discuss, in our view, what may be missing from the economic literature on education and why the inclusion of these sociological variables could make a difference to economic analysis.

#### *A. Outline and Interpretation of Non-Economic Literature*

The discussion of the sociology of education opens with Coleman's [1961] classic study of ten Illinois High Schools in the late 1950s, *Adolescent Society*. Coleman pioneered the research on students' social arrangements in school.<sup>2</sup> From questioning students themselves, Coleman found that students quite literally divide themselves into social categories; these categories are familiar to anyone who has attended a U.S. high school: "nerds," "jocks," "leading crowd," "burnouts," etc. Associated with each category is an ideal, in terms of physical attributes and behavior. Coleman also found that

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<sup>2</sup> For antecedents, see Hollingshead [1949]; for studies that directly follow in the Coleman tradition, but with a more ethnographic methodology, see, for example, Eckert [1989], Everhart [1983], and Foley [1990].

these categories influenced students' academic performance.

We offer an economist's eye to student behavior in the context of these social arrangements and depict the work of Coleman and his successors in a model of how identity affects the demand for education. Students maximize utility by making two choices. They choose their social category, and they choose effort in school.<sup>3</sup> When choosing categories, students try to fit in: They consider the match between their own characteristics and the ideal characteristics of "jocks," "burnouts," and "nerds." Effort is then influenced by category, since students' self-images also depend upon the match between their own actions and the ideal behavior of their categories. In this way, students' identities affect academic achievement. Unlike a standard economic model, effort in school is not determined just by a trade-off between pecuniary costs and benefits. Costs and benefits also depend on the school's social setting. Ethnographies of high schools reveal that social divisions and students' identities can be a dominant influence on achievement – as does the High School and Beyond data set, which was developed with Coleman's findings in mind.

We then consider historians', contemporary sociologists', anthropologists', and educators' descriptions of schools as institutions. Scholars and practitioners argue that schools not only impart skills, schools also impart an image of the characteristics and behavior of ideal students. That is, schools are social institutions, with social goals.<sup>4</sup> Scholars record how private and religious schools explicitly

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<sup>3</sup> We use the word "choice" advisedly. As in classic utility theory, we do not presume that individuals are conscious of the reasons for their choices. See Akerlof and Kranton [2000] for discussion. "Effort" is our measure of demand for schooling: it measures simultaneously the extensive margin of school input, which is years of schooling, as well as the probably more aspect of school demand, which is the intensity of commitment made to schooling by those who are currently enrolled.

<sup>4</sup> Thus Allan Bloom [1987, p.26] writes that "Every educational system....wants to produce certain types of human beings."

promote a student ideal.<sup>5</sup> They examine school rituals – pep rallies, home room announcements, assemblies – and day-to-day interactions that reveal the nature of this ideal in both public and private settings. In classrooms, hallways, and gymnasiums, teachers, administrators, and coaches praise and reward some students, while they disapprove and punish others. Furthermore, educators study how a school’s curriculum can privilege the history and literature of certain social groups.<sup>6</sup> In our model interpreting this literature, all of these features and occasions define what we call a *school’s social category* and its *ideal* student. Students with backgrounds similar to the school’s category readily *identify* with the school. Others, however, do not fit in so easily.

We describe, in a sequence of models, possible interactions between students and schools when schools are seen as social institutions. Sociologists consider these interactions important, but economic research has yet to examine this setting. Our first model captures historians’ emphasis on assimilation in American schools of the early 20<sup>th</sup> Century. In the model, schools represent a single social category, and students have two choices. They choose whether or not to adopt the school’s social category, and they choose their effort. The historians see these choices as particularly poignant for students whose backgrounds conflict with the school’s ideal. The students are likely to resent the implication, inherent in their schooling, that there is something wrong with their backgrounds, and by extension, that there is something wrong with *themselves*. To avoid a loss in self-image, a student

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<sup>5</sup> Bryk *et al* [1993, pp. 146-7], for example, describe the Statement of Philosophy of St. Ignatius School, which we discuss below. Peshkin [1985] provides the description of the ideal student at a fundamentalist Christian school.

<sup>6</sup> The history of U.S. public education is replete with debates over textbooks and curricula that some view as biased and ethnocentric. For a history of attempts in the 1920s and 30s to make New York City public school curricula more amenable to ethnic diversity, see Montalto [1982]. Glazer [1997] provides a history of contemporary debates over textbooks and multicultural education, of which Banks [1999] is a leading proponent. Spencer and Swanson [2000] discuss the negative psychological and motivational effects of ethnocentric curricula on minority students.

rejects the school and consequently exerts low levels of effort.<sup>7</sup> Studies of schools as late as the 1990's reveal similar problems among today's African- American students, Hispanic students, and other minorities whose social backgrounds are different from their schools' ideals.

The same theoretical framework captures educators' views of contemporary U.S. public schools. This view, best explicated by Powell, *et al.* [1985], is that the typical U.S. high school is “*Shopping Mall High.*” In the language of our framework, public schools today often fail to promote a particular social category.<sup>8</sup> Instead, principals and teachers preach tolerance, and the schools allow students a wide choice of classes and curricula. Educators argue that while such schools are tolerant of social differences, they are also tolerant of academic mediocrity. In the identity model interpretation of this literature, school administrators face stark tradeoffs between promoting a single ideal or offering students a choice. With choice, more students in a diverse population find ways to identify with the school. The outcome is more “democratic” in that more students are engaged in the school, but some students acquire lower skills.

This theoretical framework allows an economic interpretation of school reform programs. Educators argue that legal innovations and changes in social attitudes in the 1960s and 1970s have made it difficult for public schools to promote standards for students' behavior.<sup>9</sup> In contrast, private

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<sup>7</sup> Pediatricians (Bonny [2000]) have found that “school connectedness,” the extent to which students identify with their schools, is an indicator of safer behaviors and better health outcomes. School connectedness was a better predictor than “family connectedness.” School connectedness is malleable and related to school activities and characteristics. In this paper, we explore the various aspects of schooling that can affect school connectedness and thereby academic achievement.

<sup>8</sup> Powell, Farrar and Cohen [1985] describe the typical U.S. public high school as *Shopping Mall High* because of the great deal of choice given to students and the failure of the schools to impose their values on student choice.

<sup>9</sup> We will discuss the legal innovations below. For discussion of the social climate, see Grant [1988].

school administrators and teachers spend considerable resources to delineate prescriptions for student behavior and ensure that students identify with the school and its ideals. Successful experiments in public school reform, such as the Central Park East Elementary and Secondary Schools in Harlem and the Comer Schools in New Haven, have similar strategies. We see these schools, in our economic terminology, as *investing* in students' self-images and relationships with the school. The schools reduce the initial social differences among the students and create a community, with an ideal of academic excellence.<sup>10</sup> In the framework of an identity-model of education, such school reform can be described as relaxing the constraints in the public schools against investment in students' identities.

### *B. The Economics of Education: A Brief Summary*

Much of economic research on education considers classic topics such as the allocation of resources, market structure, and school funding, and economists have recently begun to entertain sociological influences on educational outcomes. Here we review the economic literature, with special attention to the influence of sociology on economic research and an assessment of what is still missing from economic analysis.

Since Schultz [1960] and Becker [1964] introduced the concept of human capital, economists

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<sup>10</sup> Wynne and Ryan [1997], a textbook for educators, emphasizes the role of community in a school. They claim that "proper student conduct is enhanced by a code of conduct that not only prohibits wrongdoing, but also encourages students to do things that immediately help others." Their checklist for school principals of methods to promote character shows concretely some of the ways in which schools can enhance a sense of community. These include such items as academic team competitions in or among schools (e.g., math or spelling bees), band or choir, cheerleading, classroom or building clean-up, class monitors, messengers, hall guards, and office assistants, crossing guards and patrol duty, community service, dramatic presentations, fund-raising, clubs, sports, school newspaper, peer tutoring, well-organized academic group projects, library aides, athletic or sportsmanship awards, certificates, mention in school newspaper, mention in newsletter to parents, mention over P.A. system, mention on report card, note home to parents, pep rally, posting name or photo, gold star or sticker, and special jackets or garments (pp. xxiii-xxiv).

have been concerned with the allocation of resources devoted to education and the return to education.

A large body of empirical work has examined the impact of resources on education outcomes.

Prominent recent examples include Card and Krueger [1992a, 1992b], Betts [1995], Ferguson [1998b], Hanushek [1996], Hoxby (forthcoming), Krueger and Whitmore [1999]. These studies have variously viewed resources in terms of school expenditures, teacher-student ratios, and teacher quality, and the returns to education in terms of earnings, as well as other intermediate measures such as enhanced test scores, continuation rates, and rates of college application. As we will discuss further in the conclusion, the sociological literature, in contrast, is remarkably silent on the return to resources devoted to education. The framework we develop suggests a synthesis of the sociological and economic viewpoints, where the sociology provides insights into how resources can be effectively deployed.

The delivery of education services and market structure is a second classic question in the economics of education. In *Free to Choose*, Friedman and Friedman [1980] propose privatization and school vouchers as an antidote to the agency problems inherent in governmental monopoly schools. Economists have since considered both theoretically and empirically the implications of market structure on educational attainment. Empirical studies have measured the relative effectiveness of public and private schools (e.g. Evans and Schwab [1995]) and asked whether competition increases school quality (e.g. Hoxby [1996]). On the theoretical side, Manski [1992] and Epple and Romano [1998] build models of private and public schools and ask how voucher policies affect the set of students that attend each type of school. The latter paper considers peer group effects in educational attainment; private schools offer fellowships to high quality students because they enhance the learning of other

students. Of course, peer group effects are a prominent topic in sociology and are now a well-researched area within economics.<sup>11</sup> However, as we have already noted and will discuss extensively below, the sociological literature indicates that difference in private and public schools goes beyond peer group effects and the selection (or self-selection) of students. Private schools pursue different social goals and have greater freedom to invest in the identity of their students.

Following Tiebout [1956], school funding is a third topic that has occupied economic researchers. Benabou [1993] and Fernandez and Rogerson [1996], for example, offer theoretical studies of community formation and its impact on school funding. Recently, economists have considered the impact on funding of a key sociological variable: ethnic homogeneity. Goldin and Katz [1997] find that ethnically homogeneous communities led the “high-school movement” in the early 20th Century United States. More homogeneous communities had higher school funding and greater high school attendance. Alesina, Baqir, and Easterly [1999] show the continued positive impact of homogeneity on school funding in the United States, and Miguel [2000] has shown that tribally-diverse school districts in Kenya have lower levels of funding. Miguel also provides a theoretical model in which heterogeneity reduces school quality, and therefore lowers the return to funding. The sociological literature we interpret in this paper gives a window on more basic, microeconomic effects of ethnicity on the supply and demand for education. The motivation of students themselves may derive from their ethnic background and the match between themselves and schools. Schools as institutions may

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<sup>11</sup> A body of work in economics considers schools and peer group effects on educational outcomes (e.g., Hanushek [1971], Summers and Wolfe [1977], Evans et. al. [1992], Gaviria and Rafael [1997], Levine and Painter [2000], and Sacerdote [2000]). These authors and others attempt to disentangle the impact of peer behavior on a student’s achievement from other student and school characteristics, where the peer group is often defined at the school level. The modeling below paper emphasizes the social characteristics that lead students to choose different peer groups within a school, and how school policies affect this choice.

themselves promote a particular social category and ideal student; they may also adjust their policies to accommodate an ethnically diverse student population.

Other papers in economics have considered less traditional questions in education, such as ideology imparted by schooling. Bowles and Gintis [1976] argue that the U.S. educational system was designed to produce compliant workers. Kremer and Sarychev [2000] build a political economy model where schools inculcate their students with an ideology. In a democracy, the populace may vote for a public school system (and against school choice), in order to promote ideological homogeneity.

Bishop's [1998] paper on students' social norms perhaps comes closest in spirit to the sociology and modeling we present below. His work, like ours, focuses on individual student motivation in the school's social context. He asks why norms favor athletic over academic performance. He argues that academic success rewards only the individual, while athletic success rewards students in the school as a whole. Hence, students would cooperate in learning, rather than harass those who achieve, if academic rewards depended on outside testing and competition. The sociology we discuss below, and our modeling of it, paints a more microeconomic picture of student motivation, as derived from students' identities. We examine how social categories, and the prescriptions for those categories, affect academic achievement, as well as how schools can influence students' choices.

While economists have begun to examine many substantive areas of the sociology of education, our reading of the literature indicates that two related themes have thus far eluded economic analysis. First is a sociological view of the student as the primary decision maker. Second is the conception of the school as a social institution. The modeling below attempts to integrate both these sociological

viewpoints into the economics of education. In this theoretical framework, the concepts of identity and social category are central to the demand and supply of education. Students' identity, and hence their preferences for educational attainment, depend upon their respective social categories. Schools are social institutions where curricula and the other regimens of school life are not necessarily socially neutral. Rather, students may more or less identify with their school and its explicit or implicit social goals.

This framework should enhance the economic analysis of students and schools and open the door to new research questions. The sociology we capture below provides micro foundations to the sociological effects that economists have examined, including peer effects, religious/public school differences, and impacts of ethnicity on funding. By emphasizing a micro model of student motivation and schools, we hope that economic research will be less subject to a typical critique from sociologists – that the research is a-historical, as if time and place do not matter. Without a theoretical framework that mirrors these sociological elements, economic analysis produces only partial answers to key questions. For example, the question is not *whether* additional resources are effective in the schooling process, but *when* these resources will be effective, and, if so, *why*? The theoretical models below give both a framework and a tentative answer to this question. In that framework the effectiveness of resources in skill acquisition will depend upon interaction between the resources used and student formation of academic identity. In the presence of positive interaction of this sort, even students from the most disadvantaged backgrounds can accomplish miracles.

## *II. Identity and the Demand for Education*

We begin by positing a model of student preferences where self-image, or identity, is salient. Our previous paper (Akerlof and Kranton [2000]) provides a general model of utility with identity as a key component. Much of the research in social psychology that is the basis for this model was conducted with school-age children as subjects, thus making it appropriate to adapt this model to the field of education. We describe our adaptation of the general model along with a brief summary of the general research in social psychology on group identification. We shall then show how that model can be applied directly as a theoretical summary of the sociology of high school life presented by Coleman and his followers.

#### *A. A Student Utility Function*

We construct a model of a student's utility where identity, or self-image, is salient. As in a standard model of education, a student's utility will depend on her effort in school and the pecuniary returns to this effort. Let  $e_i$  be individual  $i$ 's effort in school, and let  $k(e_i)$  be  $i$ 's skills, or human capital.<sup>12</sup> Typically, the pecuniary benefits of  $e_i$  are the returns to skills in the labor market. Pecuniary costs include  $i$ 's forgone leisure or cost of effort.<sup>13</sup> A standard utility function would posit  $i$ 's utility is a function of income and effort:  $U_i = U_i(wk(e_i), e_i)$ , where  $w$  is the wage rate per unit of skill.

We now add identity to this utility function. As in Akerlof and Kranton [2000], we begin with a set of social categories  $\mathbf{C}$ . Again, these categories may include racial and ethnic designations, gender,

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<sup>12</sup> Our concept of "effort" summarizes the student's input into education. It is thus a composite of both the length of time spent in school and also the student's effort while there.

<sup>13</sup> Other costs include foregone wages and direct expenditures on education such as books and tuition.

and in the school context include, for example, “jocks” and “nerds.” Prescriptions  $\mathbf{P}$  give the ideal characteristics and behavior for each category. An individual  $i$  is assigned to a category, and we denote this assignment  $c_i$ .<sup>14</sup>  $i$ 's self-image,  $I_i$ , depends on the match between her behavior and characteristics with the ideals for her category. Student  $i$ 's utility is then  $U_i = U_i(w_i, e_i, I_i)$ , where  $I_i = I_i(e_i, c_i; \mathbf{P})$  and  $e_i$  are  $i$ 's characteristics.

This model describes, in general terms, behavior that has been revealed by social psychology experiments. These experiments demonstrate how actions are influenced by (assigned) social categories and prescriptions for behavior. Subjects in many of these experiments have been school-age children. The Robbers Cave experiment on the formation of group identity is one classic illustration. In this experiment, two groups of randomly selected eleven-year-old boys were taken to a park in Oklahoma, where they kept apart for a week. During this week, they developed relationships and a sense of belonging to *their* group. When they met for a tournament in the second week, the eleven-year-old equivalent of war broke out, with name-calling, stereotyping, and fighting.<sup>15</sup> Minimal group experiments show that competition is not necessary for category assignments to affect behavior. These experiments, with both children and adults, show that subjects are more likely to give rewards to those assigned the same label than to others, even when the assignment is random, recipients are anonymous, and there is no impact on own payoffs.<sup>16</sup>

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<sup>14</sup> In a more general framework,  $i$  could also assign others to social categories.

<sup>15</sup> For description and discussion of this experiment, see Brown [1986].

<sup>16</sup> For description and discussion of minimal group experiments and children subjects, see Brown [1986] and Tajfel and Turner [1979, p.13-15].

The behavior of school-age children outside of experiments also reveals an appreciation of social categories. Children are aware of gender categories, and beyond the ages of five or six, they self-segregate into groups of boys and girls.<sup>17</sup> Even very young children may have some understanding of the social categories and prescriptions for “blacks” and “whites.” Delpit [1995, p.48] tells of the new black first-grader who asked her black teacher why she was speaking in a different voice, a voice blacks use when interacting with the white world: “ ‘Teacher, how come you talkin’ like a white person? You talkin’ just, like my momma talk when she get on the phone.’ ”<sup>18</sup>

### *B. High School: Jocks, Nerds, and Burnouts*

Here we adapt the preceding utility model to capture the behavior of high school students described in Coleman [1961] and numerous later studies including Everhart [1983], Eckert [1989], Foley [1990]. This model provides a prototype for students’ preferences, and we use it throughout the paper. The sociological studies all confirm that high school students in the United States create their own social divisions. High school students try to “fit in” to various social categories, such as “jock,” “burnout,” and “nerd.” Coleman’s [1961] *Adolescent Society* established the relationship between such social categories and school behavior. His work followed Hollingshead’s *Elmtown’s Youth* [1949] , which found a strong correlation between students’ class background and their behavior in

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<sup>17</sup> For an excellent survey of the research on group distinctions and social categories, see Wetherell [1996, p. 219-227].

<sup>18</sup> Students also understand ethnic social categories, and may behave accordingly. In a recent survey of high school students in Miami and San Diego, Rumbaut [2000] finds that grade point average varied according to students’ ethnic self-identification (Hispanic, Vietnamese, etc.) controlling for parents’ socioeconomic status. He also found that the more students identified as being American, the lower was academic achievement.

school. Coleman derived students' *social categories* from survey questions such as "Would you say that you are a part of the leading crowd?" and *prescriptions* from questions such as "Among the crowd you go around with, which of the things below are important [...]: be a good dancer, have sharp clothes, have a good reputation, stir up a little excitement, have money, smoking, being up on cars, know what's going on in the world of popular singers and movie stars."<sup>19, 20</sup>

These categories and prescriptions for the "leading crowd" were associated with students' self-images and academic performance. Students in the leading crowd appeared to have an enhanced self-image; they were only half as likely "to want to be someone else" as other students.<sup>21</sup> Their self-categorization seems to have affected their behavior. In schools where academic performance was *not* a criterion for being in the leading crowd, high IQ students reduced their performance: The best students were less likely to be those with the highest IQ.<sup>22</sup>

Many ethnographies have followed *Adolescent Society* in describing how high school social settings affect behavior. Eckert's [1989] study of the "jocks" and "burnouts" in a high school on the outskirts of Detroit, for example, shows that students see themselves in terms of these social categories

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<sup>19</sup> See Coleman [1961, Boys' Fall Questionnaire, p. 3]. Another example: "Now rank the following four items in terms of their importance to you: groups and activities outside school, activities associated with school, having a good time, a good reputation." [Boys' Fall Questionnaire, p. 2].

<sup>20</sup> Coleman's categories were derived from answers to questionnaires; thus there remains some question as to the extent to which his social categories were imposed by the researcher; but later ethnographic studies of high schools show clearly Coleman's categories correspond to students' own classifications.

<sup>21</sup> Coleman [1961, p.225].

<sup>22</sup> A similar finding obtained when comparing boys and girls. Girls, for whom outstanding achievement was less socially valued than for boys, also had lower variation in grades. This finding suggests that, like a girl we know who cried after winning a math prize, the girls in Coleman's survey reduced their academic achievement. Nor does the composition of SES for the different schools offer an explanation – since the importance of scholarship for membership in the leading crowd does not vary systematically with school SES.

and behave accordingly. She reports jocks and burnouts as behaving differently: in “clothing, territory, substance use, language, demeanor, academic behavior, and activities.”<sup>23</sup> Each of these behaviors signifies difference and opposition between the two groups. Jocks wear pastels, burnouts wear dark colors. Burnouts smoke, jocks abstain. Jocks hang out around the lockers and avoid the courtyard, burnouts hang out in the courtyard and avoid the lockers.<sup>24</sup> More generally, jocks accept the school’s authority; burnouts reject it.

A model where students divide themselves into three social categories bridges the gap between these sociological descriptions of behavior and the economic theory of education. In this model students divide themselves into: members of the “leading crowd,” “nerds,” and “burnouts,” the addition of nerds corresponding to the groupings found by Cohen [1979] in a factor analysis of student traits. Students also choose effort, where preferences for effort are influenced by category.

Consider a population of students normalized to size one. Each student has two characteristics. The first is an exogenously given ability,  $n_i$ , that is a complement to effort in school in the production of skills. The second is physical appearance, or “looks,”  $l_i$ . Looks and ability are both independently and uniformly distributed on  $[0,1]$ . A student’s marketable skills depends on effort  $e_i$  and ability  $n_i$ ,  $k_i = k_i(n_i, e_i)$ ; in addition there is a pecuniary cost of effort:  $\frac{1}{2}(e_i)^2$ .

As for identity payoffs, prescriptions give the ideal characteristics for each social category  $L$ , “leading crowd,”  $N$ , “nerds,” and  $B$ , “burnouts.” The ideal  $L$  has looks  $l = 1$ ; the ideal  $N$  has ability

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<sup>23</sup> Eckert [1989, p. 69].

<sup>24</sup> See Eckert [1989, p.50, p. 51 ff, p. 58 and p. 53].

$n = 1$ ; and the burnouts do not have an ideal.<sup>25</sup> Prescriptions also dictate ideal effort levels, with  $e(N) > e(L) > e(B)$ . A student's self-image depends on her own category,  $c_i$ , and the extent to which her own attributes and behavior correspond to her category's ideals. A student for whom  $c_i = L$  earns identity payoffs  $I_L - t(1 - l_i)$ , where  $t$  is a positive parameter scaling the identity loss from  $i$ 's distance from her ideal. A student who sees herself as an  $N$ , earns  $I_N - t(1 - n_i)$ .

The parameter  $t$  is critical to this and subsequent models. It measures how difficult it is for students with different ascriptive characteristics to identify with others. That is, the translation of ascriptive characteristics into social differences is proportional to  $t$ . The ethnographies would suggest that  $I_L > I_N > I_B$  so that students in the leading crowd have a more rewarding self-image than the nerds or burnouts. For convenience of exposition, the initial self-image of burnouts is normalized to zero,  $I_B = 0$ . As for behavior, a student will lose utility  $\frac{1}{2}(e_i - e(c_i))^2$  for deviations from the prescribed effort for her respective category,  $c_i$ .

The preceding description yields a utility function for a student  $i$  who is, respectively,  $L$ ,  $N$ , or  $B$ , as:

$$\begin{aligned}
 (1) \quad U_i(L) &= p\left[w \cdot k_i - \frac{1}{2}e_i^2\right] + (1-p)\left[I_L - t(1 - l_i) - \frac{1}{2}(e_i - e(L))^2\right] \\
 U_i(N) &= p\left[w \cdot k_i - \frac{1}{2}e_i^2\right] + (1-p)\left[I_N - t(1 - n_i) - \frac{1}{2}(e_i - e(N))^2\right] \\
 U_i(B) &= p\left[w \cdot k_i - \frac{1}{2}e_i^2\right] + (1-p)\left[0 - \frac{1}{2}(e_i - e(B))^2\right]
 \end{aligned}$$

where  $0 \neq p \neq 1$  denotes the weight on the pecuniary costs and benefits of effort.

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<sup>25</sup> It is straightforward to model endogenous ideals. *E.g.*, suppose the ideal is the average of members of the group. The equilibrium ideal then emerges from students' decisions to join different groups. Similar results concerning effort in school obtain.

To maximize utility, a student chooses a category as well as effort in school. The special case where  $p = 0$  describes behavior when students care only about their current social situation. Such a low value of  $p$  has been suggested by ethnographers. In the West Texas High School described by Foley [1990, p. 101]: “Most students came to school for extracurricular activities and the social scene.” For all but a few “brains” academics was a side show. In the model, a student chooses her category to balance social status with “fitting in.” For example, a student with sufficiently low  $l$  will reject the leading crowd. She loses  $I_L$  but no longer suffers the identity loss  $t(1 - l_i)$ . Students whose  $n$  is less than  $(1 - I_N/t)$  and whose  $l$  is also less than  $(1 - I_L/t)$  choose to be burnouts – they are unable to obtain positive utility either as a nerd or as a member of the leading crowd. For  $p = 0$ , each student  $i$  will choose an effort level that corresponds to the ideal for her chosen category  $c_i^*$ ; that is,  $e_i^* = e(c_i^*)$ .

This analysis then yields a contrast between the outcomes of the purely economic model with the outcomes of the purely sociological model. In the purely economic model, when  $p = 1$ , total skill acquisition is simply  $w/2$ , corresponding to the mean ability  $n$  of the population. Here, in the purely sociological model, where  $p = 0$ , and identity is the only determinant of the input of student effort, skill acquisition is:

$$(2) \quad (1 - I_N/t) (1 - I_L/t) e(B) + [(I_N/t) (1 - I_L/t) + \frac{1}{2}(I_N/t)] e(N) + [I_L/t - \frac{1}{2}(I_N/t)^2] e(L).$$

In this case skill acquisition is not determined by the wage, but by the social parameters that embody students’ desires to fit in:  $I_N$ ,  $I_L$ ,  $e(B)$ ,  $e(N)$ ,  $e(L)$ , and  $t$ .<sup>26</sup> For  $I_L > I_N$ , there is a group of students with

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<sup>26</sup> For intermediate values of  $p$ , of course, skill acquisition will depend on both the pecuniary returns to education and the social structure of the school.

high  $n$  but also high  $l$  who are in the leading crowd despite high levels of academic ability. These high ability students, just as in Coleman's schools, reduce their performance below their high ability peers.

In (2), skill acquisition is not responsive to changes in the wage, but is responsive to the degree of social difference,  $t$ , in a school. When  $t$  is high, students with high  $l$  and  $n$  are socially different from those with low  $l$  and  $n$ . It is harder to fit in as part of the leading crowd or as a nerd. Skill acquisition is low, since few students identify with these groups, becoming burnouts and exerting lower effort. On the other hand, when  $t = 0$ , all students are in the leading crowd, and skill attainment is  $e(L)$ .

As we will see further below, the preceding model allows comparative static assessment of the effects of school policies that affect school social categories and their prescriptions. School policies that change any of the social parameters of the model will almost always have an effect on educational outcomes as long as  $p$  is not equal to one. For example, let us modify the model slightly to demonstrate the effect of school athletic programs, perhaps the most pervasive U.S. school policy that affects students' social arrangements. Foley's [1990] West Texas school, for example, accorded special importance to football, and football players were among the most popular students in school. Let each student have an athletic ability  $a_i$  which is independently and uniformly distributed on  $[0,1]$ .<sup>27</sup> The ideal for an athlete is  $a = 1$ , and athletes are members of the leading crowd (earning identity payoffs  $I_L + t(1 - a_i)$ , and suffering  $\frac{1}{2}(e_i - e(L))^2$  for deviations from the ideal effort  $e(L)$ ). With the additional choice of "athlete," some students with high academic ability,  $n$ , but with high  $a$ , join the leading crowd. Students with low  $l$  and  $n$  but with high  $a$ , also choose to be athletes. That is, athletics allows an entree

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<sup>27</sup> Hollingshead [1975] found that athletic participation was positively correlated with social class. See also Coleman [1961].

into the leading crowd for those who would otherwise be burnouts. Athletics also turns some nerds into “jocks,” as well as some burnouts into jocks. The effect on average skills may be either positive or negative, but unambiguously, there are fewer students in the two extreme categories. In this way, school athletic programs “democratize” skill acquisition. This outcome corresponds to the description of Foley’s school, where working class Mexican-Americans found their way into the leading crowd by excelling at football. The Mexican-Americans players were mostly from “low white collar” (54%) or “blue collar” families (20%), but they were much more likely than their peers to pursue a college education and to end up in middle class jobs.<sup>28</sup>

The rest of this review examines the sociological analysis of US school reform. We shall see that this involves far deeper alterations to the model than the simple change of one of the parameters or the simple introduction of athletics. Before turning to this analysis, we shall first describe just a bit further the relation between *Adolescent Society* and the further empirical study of U.S. schools.

### *C. High School and Beyond*

Coleman’s endeavor of describing the social categories whereby students describe themselves branched out in two ways. The empirical methodology in *Adolescent Behavior* was based on questionnaires. Ethnographers took this work in one direction: As participant-observers in schools, their observations give details not possible with questionnaires. On the other hand, such methodology suffers both because of small sample size and sample selection bias. An alternative follow-up to

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<sup>28</sup> See Foley [1990, p. 138 and Tables 2 and 4, pp. 232, 233]

Coleman's work was the creation of a national sample. Such a sample, which reveals Coleman's influence in many of its questions, is the High School and Beyond Surveys.

Even rudimentary tabulations of the data from these surveys show Coleman's categories writ large. Such tabulations demonstrate that there is a statistical basis for his claim that students in different social categorizations have different opinions of themselves and different behaviors. Thus, for example, nerds, athletes, and members of the leading crowd have higher self-images than burnouts. Table 1 categorizes students who reported taking advanced English or math classes as "nerds;" students on sports teams as "athletes;" those who responded "yes" to "are you a member of the leading crowd in your school?" as in the "leading crowd," and those who reported disciplinary problems as "burnouts." The nerds, athletes, and members of the leading crowd appear to have better opinions of themselves than students outside these respective categories. They were more likely to agree strongly with the statement "I take a positive attitude of myself;" less likely to be "depressed or unhappy a lot" in the past few weeks; and less likely to agree with the statement "I think I am no good at all." Burnouts show the exact opposite pattern.

Similarly, as in the model, athletes, nerds, and members of the leading crowd show more positive attitudes toward school than students outside their respective category. Table 1 shows that they were considerably less likely to view school discipline as poor; less likely to have been bored a lot; more likely to be disappointed if they do not graduate from college; and more likely to like working hard in school. Burnout attitudes had the opposite pattern. These observations are consistent with the premise of our model that athletes, nerds, and the leading crowd all identify with school; burnouts reject it. In Table 2 we see that burnouts are less likely to be from the top quintile of SES and considerably

more likely to be from the bottom quintile than non-burnouts, and exactly the opposite pattern describes the SES of athletes, nerds, and members of the leading crowd. Coleman's leading assumptions, which are the leading assumptions of our summary model, appear to have a statistical presence in the High School and Beyond sample.

### *III. The School as an Institution*

To sociologists, schools are institutions that not only impart skills, but also impart an image of the characteristics and behavior of ideal students. Here we discuss this second aspect of the sociological approach to education that we emphasize in this paper, and use our modeling above to build a model of such a school. In this approach students' social categories delineate whether a student accepts or rejects the school itself. We have already seen Eckert's description that a primary division between jocks and burnouts is that jocks accept the school as an institution and participate in its activities, while the burnouts reject the school.

Why would students adopt a category whose primary feature is rejection of their school? The sociology of schooling emphasizes the systematic social differences between students and schools as reasons for such rejection. Histories of urban education, for example, emphasize the clash between the Americanizing schools of the early Twentieth Century and their immigrant students. According to these histories, students were not just taught reading, writing, and arithmetic. In school, they were also corrected in other details of comportment, including what to wear and how to speak.<sup>29</sup> The teachers

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<sup>29</sup> According to Tyack's [1974, p. 234] history, turn-of-the-century public schools demanded "total assimilation ... [and] creat[ed] a sense of shame at being 'foreign.'" See also Hampel [1986].

believed they were helping the students learn what they needed to be economically successful. The skills were socially neutral – just logic and reason.<sup>30</sup> But that is not how it seemed to all students. One protagonist, quoted prominently by Hampel [1986], relates that his loving English teacher disapproved of his clothing and manners and saw him as a “*filthy little slum child.*” This episode shows the culture clash emphasized by education historians, that even the most caring teachers can unknowingly offend their students and convey that they are inferior.

In our modeling below, schools face a tradeoff that captures the historical and ethnographic accounts of schooling in the U.S. These accounts, and our model, see the school as having a choice between promoting a student ideal closer to economically useful cultural norms and skills, and student ideals that are closer to the students’ social backgrounds. It may seem strange to an economist that such a tradeoff exists. But sociologists’ accounts reveal that skills, and certainly norms of dress and comportment, are not socially neutral. Even such skills as speaking English and mathematics are associated with particular social categories, and a curriculum can privilege certain social groups. In this case, the promotion of certain skills and prescriptions for behavior can alienate students from different social backgrounds.

Before proceeding, let us emphasize that rejection of school has implications for behavior and academic achievement. Willis’ [1977] classic day-to-day account of working class British adolescents

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<sup>30</sup> Bloom [1987, p. 27] characterizes the social category whence immigrant students were being rescued as that of the “traditional communities where myth and passion as well as severe discipline, authority, and the extended family produced an instinctive unqualified, even fanatic patriotism.” He contrasts this with the ideal of the schools: “the rational and industrious man, who was honest, respected the laws, and was dedicated to the family....Above all he was to know the rights doctrine; the Constitution, which embodied it; and American history, which presented and celebrated the founding of a nation ‘conceived in liberty and dedicated in the proposition that all men are created equal.’” For the purposes of this paper it does not matter whether Bloom has given the correct interpretation of the contrasts; all that matters is that the protagonists believed in these differences.

illustrates this problem. To Willis, the school itself, as an institution, embodies a set of prescriptions, derived from teachers who value order and discipline, as well as the administration that sponsors programs to “reform” working-class youth. Willis’ account shows students’ powerful reactions to such school messages. He follows a group of students who call themselves “the lads,” who resist schooling and end up, like their parents, in working class jobs. The lads reject their school’s middle-class ideal. They define themselves in opposition to the school, to its staff, and to the “ear ‘oles,” their classmates who passively listen and obey.

The lads’ opposition to the school can be found in almost every interaction with school authorities. They break school rules, by drinking, smoking, disrupting class, and, especially, by generating a “laff” (practical joke). Their clothes suggest sexual maturity, just as their smoking and drinking indicate their rejection of school rules meant for children. Just prior to graduation, the lads got drunk at a pub at lunch time and returned to school to see the reaction of the school authorities. Teachers were surprised at the lads’ lunch-time spree because they could have waited until the evening and not lost their chance to graduate with their class. But the teachers missed the point; they missed the symbolism of the lads’ last act of defiance.

Following other ethnographies, the lads behave like “burnouts” everywhere. Foley [1990] relates a similar West Texas example of resistant behavior by Mexican-American male high school students.<sup>31</sup> Foley relates hitching a ride with some “*vatos*” to an away football game. As the boys light up joints on the way, they plan to chase the local girls and provoke a fight with the local males,

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<sup>31</sup> For Mexican Americans, see also Valenzuela [1999]. Fordham [1996] provides a study of African-American students.

thereby using a “respectable event to be disrespectful, rebellious and cool.”<sup>32</sup> Just as the lads’ use their school’s prescriptions against alcohol and smoking as the context for their displays, the *vatos* use their school’s preoccupation with football as the backdrop for their resistance.

Willis and Foley see it as no coincidence that the lads and the *vatos*, respectively, come from working-class families. To them, the schools are insulting. Foley relates that the only *vato* who had made it into the middle class<sup>33</sup> reflected, ten years later, on his high school experience. The key features of the models that follow – the anger at teachers and school and the corresponding social divisions, with some students accepting the school and others rejecting it – reflect these attitudes:

We were really angry about the way the teachers treated us. They looked down on us and never really tried to help us. A lot of us were real smart kids, but we never figured that the school was going to do anything for us....We were the violent macho types, I guess. They’d [the teachers] manipulate the nerds into school and books. There was a real separation between us and the nerds and the jocks.<sup>34</sup>

A sequence of three models will capture the historical development of U.S. schools in the 20<sup>th</sup> Century. Over the last century, historians and education reformers tell us U.S. public schools have changed. They have gone from unabashedly promoting a single social ideal to promoting no ideal. Today’s schools are ecumenical, operating in an environment where students and parents have more rights and say. There are numerous proposals for reform of this educational system.. The first model captures historians’ depiction of the initial period, in the early 20<sup>th</sup> Century: schools have a single ideal, which students may accept or reject. The second model conforms to the sociological picture of

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<sup>32</sup> Foley [1990, p.58].

<sup>33</sup> Foley [1990, p. 140].

<sup>34</sup> Foley [1990, p. 139].

contemporary public education: schools adjust to their diverse student bodies by allowing students to choose among different ideals within the same school. The third model captures the nature of reform programs: schools reduce the social difference between students and their schools; students then identify with these schools, which promote high academic achievement.

In our review, rules and disciplinary processes will appear prominently as evidence of the *ideals* and *prescriptions* of their respective schools. Sociologists view such observations as especially revealing. In his study of the Puritans, Erikson [1966] observed that rules and disciplinary proceedings delineate the boundaries of a community. Punishment is an occasion to draw the line between acceptable and unacceptable behavior. Accordingly, those who willingly disobeyed the rules are not full members of the community. In the school context, we have already seen how the lads and the *vatos* used disobedience of school rules to demonstrate their rejection of the school and its ideals.

#### *A. A Model of a School with a Single Ideal*

A model with a single ideal reflects historians' view of late 19<sup>th</sup> and early 20<sup>th</sup> Century U.S. public schooling. Associated with the school is a social category, which we label  $S$ . The school's prescriptions give the ideal characteristic and behavior of a student in this category. Suppose students' characteristics  $\theta_i$ , such as class, ethnicity, or other social attributes, are uniformly distributed on  $[m - F/2, m + F/2]$ , where  $m$  is the mean and  $F$  represents the diversity of the student population.<sup>35</sup>

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<sup>35</sup> Students' characteristics  $\theta_i$ , in general, can include a variety of traits. Some will be correlated with a family's socioeconomic status, race, and ethnicity. Others will be purely idiosyncratic. Most economic models consider idiosyncratic traits as tastes, randomly distributed in the population. In our setting, these traits reflect a student's social background. We consider how these socially defined traits affect effort in school. Idiosyncratic components would explain the differences in outcomes within social groups. For instance, there are "burnouts" even at all white middle- and upper-class schools. A poignant fictional example, J.D. Salinger's Holden Caulfield, speaks in the voice

Let  $s \in [m - F/2, m + F/2]$  denote the ideal characteristics of  $S$ , and let  $e(S) > 0$  denote the ideal effort level. We call  $s$  the school's ideal.

As in the model of the previous section, a student's self-image depends on her category and the extent to which her own attributes and behavior match the ideals for her category. A student  $i$  who identifies with the school category,  $S$ , earns  $I_S - t(s - e_i)$  for  $e_i \leq s$  and earns  $I_S$  for  $e_i > s$ . The parameter  $t$  again measures the extent to which students with different characteristics are socially different from the school's category. A student suffers an identity loss  $\frac{1}{2}(e_i - e(S))^2$  for diverging from the ideal effort level  $e(S)$ . A student  $i$  who does not identify with the school, a "(B)urnout," earns identity payoffs  $d_i I_B$  where  $0 \leq d_i \leq 1$  is the level of student  $i$ 's disruption in the school. This disruption expresses an alternative identity, as seen in the behavior of the lads and the *vatos*. A  $B$  will also lose utility of  $\frac{1}{2}(e_i - e(B))^2$  for deviating from the prescribed effort level  $e(B)$ , which we normalize to zero.

We assume that the school ideal,  $s$ , affects marketable skills. In particular, the greater is  $s$ , the more marketable skills a student obtains for a given effort level. This assumption reflects associations between certain social categories and the curriculum, behavioral prescriptions, and other aspects of economic success. Let the production function for skills take the form  $k_i = se_i(1 - d_i)$ , where skills are increasing in  $s$  and  $e_i$  but decreasing in disruption  $d_i$ . With these assumptions, an  $S$  and a  $B$  have utility, respectively,

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of a burnout.

$$\begin{aligned}
(3) \quad U_i(S) &= p \left[ \varepsilon \cdot \sigma_i - \frac{1}{2} \sigma_i^2 \right] + (1-p) \left[ I_S - \frac{1}{2} (\sigma_i - \sigma(S))^2 \right] \text{ for } \varepsilon_i > \varepsilon \\
&= p \left[ \varepsilon \cdot \sigma_i - \frac{1}{2} \sigma_i^2 \right] + (1-p) \left[ I_S - t(\varepsilon - \varepsilon_i) - \frac{1}{2} (\sigma_i - \sigma(S))^2 \right] \text{ for } \varepsilon_i \leq \varepsilon \\
U_i(B) &= p \left[ \varepsilon \cdot \sigma_i (1 - d_i) - \frac{1}{2} \sigma_i^2 \right] + (1-p) \left[ d_i \cdot I_B - \frac{1}{2} (\sigma_i - \sigma(B))^2 \right].
\end{aligned}$$

As previously, the special case  $p = 0$  is the pure sociological model. In this case, any student who does not identify with the school will choose  $d_i = 1$ . The number of burnouts is determined by the position of the school,  $s$ , relative to the distribution of the students, and the relative gain of identifying with school  $I/I_S \neq I_B$ . Let  $\beta$  denote the fraction of burnouts. We have

$$(4) \quad \beta = \frac{1}{2} + \frac{\varepsilon - m - I/t}{\sigma}$$

and mean skill acquisition, denoted as  $K$ , of

$$(5) \quad K = \varepsilon \cdot \sigma(S) \cdot \left( \frac{1}{2} - \frac{\varepsilon - m - I/t}{\sigma} \right)$$

For  $s$  sufficiently above the median student,  $K$  declines in  $s$  even though higher  $s$  contributes directly to skill acquisition. As  $s$  increases, more students reject the school, reducing the total skill level. The parameter  $t$  is critical. The greater is  $t$ , the greater the social differences between the students and the school. For a given  $s$ , as  $t$  increases, more students reject the school and skills decline.

### *B. Hamilton High to Shopping Mall High*

The modeling above captures events at “Hamilton High,” events which sociologists believe reflect general trends in U. S. education. *The World We Created at Hamilton High* by Gerald Grant

[1988] gives a detailed account of an up-state New York high school from the 1950s to the 1980s. This history relates a great deal of discord – even the closure of the school for some period of time. It also tells of the healing process whereby gradually the school came back together as a place of learning. To an economist *Hamilton High* seems to be only a curious story: it does not fit into economists' categories. There is massive change in educational outcomes, but no change in resources. Shifts in parameters of the previous model, however, easily capture Grant's history of the school. A review of this history illustrates the difference between the economic and sociological models of education.

In the 1950s and early 1960s, Hamilton High's student population was homogeneous ( $F$  was small) and its ideal,  $s$ , was in the center of the population of white middle-class students. Students actively participated in the school activities, in the newspaper, Greek letter fraternities and sororities, the girls' club, and the *a capella* chorus, etc.. The school's prescriptions were clear. The principal had few doubts that his job was to “enforce middle-class standards of courtesy and respect, emphasize a college preparatory curriculum and put winning teams on the Hamilton field.”<sup>36</sup>

Grant then relates what happened after a significant number of poor black students entered the school in the late 1960s under orders of forced integration. In terms of our model, the diversity,  $F$ , of the students rose; most of the new students' characteristics were considerably below the school's ideal  $s$ . The model predicts exactly what happened: that the number of burnouts and the disruption in the school would increase. In Hamilton High the new students reacted almost immediately to rejection by the white students and the faculty.<sup>37</sup> Day-to-day, there were clashes, arising from what black students

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<sup>36</sup> Grant [1988, p.241].

<sup>37</sup> For changes in  $F$  holding constant the upper bound  $m + F/2$ , the number of burnouts,  $\$$ , is increasing in  $F$ .

and their parents saw as racism and unfair application of school rules. The following interaction was a typical classroom exchange:

*Teacher* (to black student): Please sit down and stop talking.

*Student*: I was only seeing if I could borrow a pencil and a piece of paper for that quiz you were talking about.

*Teacher*: You know you're supposed to be in your seat.

*Student*: But you will give me a zero if I don't have a quiz paper.

*Teacher* (slightly exasperated): Sit down. You're supposed to bring those things to class or borrow them before class.

*Student* (voice rising): Why you picking on me? You don't pick on white kids who borrow a piece of paper.<sup>38</sup>

Anger rose to the point that riots closed the school. The riots began as the aftermath of a fraternity party behind the school where white students told a group of blacks to "get out of our school." The next Monday, some of the new students tore up the school cafeteria. A chemistry teacher summarized students' feelings:

The black students were responding to the way they were being treated. You know, it's like these white teachers don't really care anything about me...He isn't teaching me anything. You know, it's a handout sheet every day or it's a film everyday. The teacher may be making racist remarks overt or subtle...<sup>39</sup>.

The principal of the school looking back at the period said: "[the school] gave them the message that 'some people did not belong.'"<sup>40</sup>

As the story of Hamilton High continues, we see the school adjusting to its diverse student body. Gradually, the school of Greek-letter clubs and *a capella* choruses faded away. A new school

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<sup>38</sup> Grant [1988, p.36].

<sup>39</sup> Grant [1988, p. 35].

<sup>40</sup> Grant [1988, p. 38].

emerged, whose defining features were tolerance and students' rights to choice.<sup>41</sup> A slightly revised model below captures this new Hamilton High, which is similar to what has been elsewhere described as the typical contemporary U.S. high school, *Shopping Mall High* [Powell, et. al. (1985)].

In Hamilton High, as in other schools throughout the country, students in the 1970s were granted greater rights. Gone were the days of unquestioned *in loco parentis* and a consensus on the school's ideals.<sup>42</sup> At Hamilton High, new rules essentially eliminated teachers' authority to enforce academic and other behavioral standards. Arbitration guidelines, adopted in 1972, allowed students to initiate grievance procedures "when the behavior of any staff member willfully imposes upon a student the ethical, social or political values of the staff member."<sup>43</sup> Teachers only rarely corrected student behavior, inside or outside the classroom. A teacher who asked a repeatedly tardy student to bring a note from home when late was told by the parent: "stop worrying my child just because you have a middle-class hang-up about time."<sup>44</sup> Teachers who tried to punish students for cheating often had to defend their allegations to the principal, to the student's parents, and, when called upon, to the student's lawyers.

Students also gained rights to choose their curriculum. The school instituted more elective courses; only ten of eighteen credits required for graduation were specified. Even though formal

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<sup>41</sup> The problems at Hamilton High are an extreme version of the day-to-day struggle to maintain school order. Everhart, along with Willis [1977], Foley [1990], Weiss [1990], and others, paint a remarkably similar picture of the many small and large ways students assert themselves against teachers' authority, disrupting class and school operations. When students do not identify with the school and accept its authority, learning does not occur.

<sup>42</sup> We discuss in detail below the legal innovations that advanced students' rights.

<sup>43</sup> These guidelines were distributed to all students in a handbook outlining their rights (Grant [1988, p.53]).

<sup>44</sup> Grant [1988, p. 54].

tracking was eliminated, students now tracked themselves. Those interested in academics sought out the best teachers, and those not interested chose less challenging courses. As the school turned to *laissez faire*, the troubles died down. Learning took root again, but the previous standards no longer applied.

Grant's description of the new Hamilton High conforms to educators' description of typical U.S. high schools across the country [Hampel (1986)]. Powell *et al.* [1985] call these high schools "shopping malls," where students are treated as customers. The schools give them what they want, making little or no attempt to change their values. The *Shopping Mall High School* appears not to be just the result of changes in the 1960s as reported by Grant and Hampel, but rather to be the much longer evolutionary outcome of continued democratization of US schools. This democratization was even more dramatic earlier in the century (see Katz and Goldin [1997]) with watered-down curricula, especially as life skills curricula were prepared for the non college bound, who were said to be "preparing for life."<sup>45</sup>

### *C. A Model of Shopping Mall High*

We now model how a school may adjust to its student population and capture the essence of a *Shopping Mall High School*. The school has two options. It can select a single ideal. Alternatively, the school can give the students a choice between two ideals. The school makes this selection to

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<sup>45</sup> This debate is well-documented in Krug [1964] and [1972]. Ravitch [1983, p. 46] excoriates progressive educators, who championed nontraditional high school curricula, emphasizing life skills relating to health, vocation and family and community life. Their recommendations were the opposite of those of Charles Eliot's NEA Committee of Ten – that all high school students should be on a roughly similar track, with all curricula based on traditional academic subjects.

maximize the total skills,  $K$ .<sup>46</sup> The analysis shows each of the school's options in turn, then determines which of the two options is optimal.

*Single-s optimum.* Recall that  $K$  takes into account students' choices whether or not to identify with the school given their characteristics. As we have already seen,  $K = s \cdot \mathbb{E}(S) \cdot [1 - \beta]$ , where, as before,  $\beta$  is the fraction of burnouts. The choice of  $s$  involves a trade-off: Increasing  $s$  increases skills directly, but reduces  $[1 - \beta]$ , the number of students who identify with the school. The optimal  $s$  balances these effects. From (4) and (5) above, the optimal  $s$  that maximizes  $K$  is:

$$(6) \quad s^* = \min \left[ m + \frac{\sigma}{2}, \frac{1}{2} \left( m + \frac{\sigma}{2} + \frac{I}{t} \right) \right]$$

Notice again the impact of the social parameter  $t$ ; the optimal ideal  $s^*$  is decreasing in  $t$ . The more students view themselves as different from the school, the more the school must reduce its ideal to engage students in the school and increase skills.<sup>47</sup>

*Double-s Optimum.* The evolution that took place at Hamilton High can be understood in the context of the model by considering the possibility that the school can give students a choice, rather than insisting on a single ideal. Assume that the school can set two ideals  $s_H$  and  $s_M$ , where  $s_H > s_M$  and  $s_H$  is associated with higher academic achievement. There are now three social categories: (H)onors students, with ideals  $s_H$  and  $e(H)$ ; (M)iddle students with ideals  $s_M$  and  $e(M)$ , and (B)urnouts, with no

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<sup>46</sup> Certainly, a school administration could have other goals in choosing its category and prescriptions, as would be the case in religious schools. We discuss this possibility below.

<sup>47</sup> This level of  $s$  is invariant to changes in  $F$  and  $m$  when  $m + F/2$  is held constant. The optimal school after integration at Hamilton High would be the same as the optimal school before integration. However, if we included the many externalities of disruption, the school would lower  $s$  to account for the new students.

ideal and ideal effort level  $e(B)$ , where  $e(H) > e(M) > e(B) \neq 0$ .

As before, a student's identity depends on the match between own characteristics and behavior and the ideal of her category. A student  $i$  choosing category  $c_i = H, M$  earns identity payoffs

$I_S - t(s_c - s_i) - \frac{1}{2}(e_i - e(c_i))^2$  for  $s_i \neq s_c$  and earns  $I_S$  for  $s_i > s_c$ . Burnouts earn the identity payoffs

of the previous model. We again consider students' choices of effort and category for  $p = 0$ .<sup>48</sup> There

will be  $(1/F)(m + F/2 - s_H)$  H students;  $(1/F)(s_H - s_M + I/t)$  M students; and

$(1/F)(s_M - I/t - m + F/2)$  B's. Mean skills as a function of  $s_H$  and  $s_M$  are:

$$(7) \quad \bar{e} = s_H \left[ \frac{1}{2} + \frac{m - s_H}{\sigma} \right] e(H) + s_M \left[ \frac{s_H - s_M}{\sigma} + \frac{I}{\sigma \cdot t} \right] e(M)$$

When setting  $s_H$  and  $s_M$ , the school faces two tradeoffs. First, as with one category, raising ideals  $s_H$  and  $s_M$  directly increases skill attainment, but increases the number of burnouts. Second, there is competition between the categories. Increasing  $s_H$  increases the skills of the honor students, but more students will opt for the middle category, with lower educational attainment. An appendix provides the optimal  $s_H^*$  and  $s_M^*$  as functions of  $I, m, F$ , and  $t$ :  $s_H^*$  and  $s_M^*$  are increasing in  $m$  and  $F$ , and decreasing in  $t$ . The distance  $(s_H^* - s_M^*)$  increases with  $t$  and  $F$ .

*Selection Between Single-s or Double-s School.* When is it optimal for a school to give students a choice rather than to promote a single social ideal? The results match the historical accounts.

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<sup>48</sup> An appendix available upon request gives the full specification and analysis of the model. In the analysis we assume that all students located above  $s_H$  choose H. For  $s_H = s_M$ , we assume that students located above  $s_H = s_M$  choose H (and exert  $e(H)$ ) and students located below  $s_H = s_M$  that choose to identify with a school choose M and exert  $e(M)$ . This assumption prevents a discontinuity in the numbers of H and M students at  $s_H = s_M$ . In what is written below, we assume  $s_M > m - F/2 + I/t$ . This assumption is without loss of generality because it is never optimal for the school to set  $s_M$  at a lower level.

Comparison of the total skills for one category,  $s^*$ , and of two,  $s_H^*$  and  $s_M^*$ , shows that when the social distinctions are large ( $t$  is large or  $F$  is large), the school achieves higher skills by providing two categories. Two categories increases the number of students who identify with the school. When the social distinctions are small, ( $t$  is small or  $F$  is small), students are more likely to identify with the school, and a school will maximize skills by eliminating choice and providing a single standard. The events at Hamilton High are thus consistent with the model. Initially in the short-run while the single initial value of  $s$  was fixed there was massive disruption, which was eased as the school in the long-run moved from a single- $s$  ideal to a double- $s$  ideal with choice and tolerance.

#### *IV. Investments in Identity and School Reform*

In this section, we review contemporary school reform programs and capture their basic features in a further adaptation of the identity model. In the previous generation, educators promoted large schools to take advantage of economies of scale in instruction (Conant [1959]). Schools should be consolidated so that a variety of advanced courses could be offered. The current view of school reform promotes small schools, with unified programs. School reform on both the left and the right can be characterized in this same way. In this characterization, reformed schools use resources to create a community, represented in the model as a reduction in the parameter  $t$ .<sup>49</sup> Students with low values of  $t$  do not differentiate themselves from each other according to their home background. This leaves schools free to choose an  $s$  leading to high skill acquisition.

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<sup>49</sup> We could also model investments that change the distribution of students' characteristics. Similar results obtain. Reforms can also involve prescriptions for effort in school. We discuss disciplinary reforms below.

### *A. Central Park East Elementary and Secondary Schools*

Central Park East Elementary and Secondary Schools is a poster child for school reform and illustrates the value of creating a community and inducing students to identify with the school. There is no doubt about CPESS' success. In East Harlem, a neighborhood where students are more likely to go to jail than to college, this school has almost no dropouts; it sends 90 percent of its graduates on to college of whom 90 percent graduate.<sup>50</sup>

Accounts of CPESS suggest that the success of the school lies in students' and teachers' identification with the school and its academic ideals. This identification is no accident. From the very beginning, school administrators set out to create a new type of school, with a strong sense of community. The unusual pedagogy and arrangements at CPESS, which we discuss below, differentiate its students from others in their neighborhood and public school system, enhancing the group identity of the school. The school takes students out of their troubled community, and isolates them in a different world. We thus see in CPESS a re-enactment of the Robbers Cave experiment on a different canvas. There is a non-experimental goal, to give students an identity of achievement; and CPESS is in a real-life neighborhood, one of the poorest in New York City, rather than in a rural Oklahoma park. The importance of creating a new, different social category is apparent to Deborah Meier, the founder-director. In her words: "We committed ourselves openly and loudly to being different."<sup>51</sup> She further emphasizes: "We wanted no 'we' versus 'they' in this community."<sup>52</sup>

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<sup>50</sup> Indeed the school has been dubbed the "miracle in East Harlem."

<sup>51</sup> Meier [1995, p.30].

<sup>52</sup> Meier [1995, p.20].

The school's pedagogy, its signature, differentiates it from other schools. The curriculum is generated by the ideas of students themselves, and examining these ideas systematically using "The Five Habits of Mind." These five habits involve approaching issues by asking and answering: "How do we know what we know?", "Who's speaking?", "What causes what?", "How might things have been different?", and "Who cares?"<sup>53</sup>

The school's other practices help students identify with each other and the school; in terms of the model, the school promotes a low value of  $t$ . Beyond the student-centered pedagogy, the school has small class size, small overall school size, multiple-year student-teacher assignments, and, in higher grades, relatively few period-to-period shifts between teachers – all measures to encourage familiarity among students and teachers. Qualitative aspects of the school, such as emphasis on student ideas and student presentations and projects as well as lengthy open-ended teacher-parent conferencing, are all designed to make each student feel as if she belongs, as if to a family.

### *B. A Model of School Reform*

Our interpretation of this educational reform strategy as creating a community around a specific idea is captured by a slight elaboration of the previous model. The model shows when resources devoted to such reforms enhance educational attainment. It thus bridges the gap between the sociological paradigm and economists' emphasis on resources. In the model, a school has resources  $r = 1$  which it can divide into two uses, those directly devoted to the teaching of skills, in proportion "

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<sup>53</sup> Meier [1995, p.50].

with the remainder,  $1 - \alpha$ , devoted to creating community and reducing  $t$ , the social differences between the students and the school.<sup>54</sup> Skills increase directly in  $\alpha$ :  $k_i = \alpha s e_i (1 - d_i)$ , at the expense of social difference: we have  $t(\alpha)$ , which is also increasing in  $\alpha$ .

The school's objective function (for  $p = 0$ ) is now in the two- $s$  and one- $s$  case respectively:

$$(8) \quad \begin{aligned} K &= \alpha s_H \left[ \frac{1}{2} + \frac{m - s_H}{\sigma} \right] s(H) + \alpha s_M \left[ \frac{s_H - s_M}{\sigma} + \frac{I}{\sigma \cdot t(\alpha)} \right] s(M) && \text{2-}s \text{ Case} \\ K &= \alpha \cdot s \cdot s(S) \cdot \left( \frac{1}{2} - \frac{s - m - I/t(\alpha)}{\sigma} \right) && \text{1-}s \text{ Case} \end{aligned}$$

In the two- $s$  case, the school chooses  $s_H$ ,  $s_M$  and  $\alpha$ ; in the one- $s$  case it chooses  $s$  and  $\alpha$ . Solving first for the optimal ideals –  $s^*$  in the 1- $s$  case and  $s_H^*$ ,  $s_M^*$  in the 2- $s$  case – we see that optimal ideals are increasing in  $(1 - \alpha)$ , the fraction of resources devoted to reducing social differences. As students identify more with the school, the school can promote an ideal that is more amenable to marketable skills. With an internal solution,  $\alpha$  satisfies the following condition, which show the costs and benefits of such an investment:

$$(9) \quad \begin{aligned} \frac{dK(\alpha)}{d\alpha} &= \frac{K}{\alpha} - \alpha \cdot t'(\alpha) \frac{I}{\sigma \cdot t(\alpha)} \left[ s_M^* s(M) \right] = 0 && \text{2-}s \text{ Case} \\ \frac{dK(\alpha)}{d\alpha} &= \frac{K}{\alpha} - \alpha \cdot t'(\alpha) \frac{I}{\sigma \cdot t(\alpha)} \left[ s^* s(S) \right] = 0 && \text{1-}s \text{ Case} \end{aligned}$$

where  $s^*$  and  $s_M^*$  are the optimal choices for a given  $\alpha$ . In both cases, investments in reducing  $t$  result in a direct loss in skills due to diversion of resources, reflected in the first term  $K/\alpha$ . The benefit is an

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<sup>54</sup> It is possible that resources devoted to reducing  $t$  are also directly complementary to skill acquisition – as many would argue that CPSS' special curriculum enhances learning.

increase in the number of students who identify with the school. The second terms show the skills of these students.

There is an interior solution for  $\theta$  when  $t(1)$  is sufficiently high.<sup>55</sup> When students initially think of themselves as quite different from the school, a small investment to reduce  $t$  can have a large impact on skills. In this case, it is optimal to spend resources to change this social parameter. Furthermore, with sufficient investment in  $t$ , it is optimal for the school to promote a single ideal.

The model suggests that there is much greater similarity between the “liberal” and “conservative” reform agendas than is apparent in the often shrill debate. Both emphasize special curricula that create school communities. That is, both invest to reduce  $t$  in order to raise the ideal  $s$ . Both are then stark contrasts to the *Shopping Mall High* which makes no attempt to change social parameters. We have already seen the distinct pedagogy and student ideal in CPESS. We see similar elements in Core Knowledge Charter Schools, a prime example of conservative reform. In these schools, students should learn what Hirsch [1996] identifies as “Core Knowledge.” The central idea of the school – its  $s$  in the language of the model – is the role of this curriculum in “promot[ing] a community of learners – for adults and children.”<sup>56</sup> The aim of the curriculum and other aspects of the reform is to trump the effect of students’ backgrounds on school participation. The rules of a school in Parker, Colorado illustrate. Students must wear uniforms and obey a dress code so strict it details socks, which “must be worn in a coordinated color with the school uniform and worn in a matching pair

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<sup>55</sup> At  $\theta = 0$ , the condition is always positive, hence we must have  $\theta > 0$ . At  $\theta = 1$ , the condition is negative for  $\theta$  sufficiently large (recall that  $\theta$  is positive).

<sup>56</sup> See: <http://www.coreknowledge.org/CKproto2/about/index.htm#BEN>.

of the same color.” Furthermore, students and parents must sign an agreement to abide by the school’s code of discipline.<sup>57</sup> These rules and codes of discipline, as we shall discuss next, delineate the boundaries of a school community and play important roles in reform programs.

### *C. Discipline in Schools*

In the non-economic accounts of schools and of educational reform, rules and discipline are a common theme. This emphasis echoes Kai Erikson’s [1966] observations that by obeying the rules one becomes a part of the community, by breaking them, one becomes an outcast. Schools’ rules and disciplinary procedures therefore give a window on school ideals and prescriptions for behavior.

The reforms by James Comer of two New Haven schools exemplify the role of discipline.<sup>58</sup> These reforms were designed to induce students to identify with the school and internalize its values. Comer describes the situation when he arrived at Baldwin Elementary School as “shocking.” Desperate teachers were unable to establish order. Children milled around, yelling and screaming, calling the teacher and each other names.<sup>59</sup> Five years later order reigned, as depicted on the cover of his book, *School Power*: a classroom with all students neatly dressed, smiling at their desks, eagerly

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<sup>57</sup> See: <http://www.ckcs.net/>.

<sup>58</sup> CPESS is another example of how a school’s disciplinary procedures delineates the community. Students sent to the Director’s office for misconduct are led through the Five Habits of Mind to sort out the problem (Meier [1988, p. 50]). Such a method would be ineffectual if the students did not already identify with the school and its particular precepts.

<sup>59</sup> Comer [1980, p. 76].

raising their hands.<sup>60</sup> Comer says that the success of his program comes from students' internalization of school values. He illustrates with the example of a student who himself acts as disciplinarian. This student stopped a fight on the playground with the words: "we don't do that in this school."<sup>61</sup>

Comer demonstrates the nature of the disciplinary process with the case of an angry fifth grader who had attacked a smaller child with his belt. Rather than simply punishing the student who misbehaved, the teacher, who had been trained to look for causes for misbehavior, wormed out of the boy that he was upset because his father had been denied a pass from jail for Christmas. She helped him write a letter to his father, but, at the same time, she also made him understand he could not take out his feelings on other children.<sup>62</sup> A central facility was also established where children could take hold of their feelings, relax and play, before being returned to the classroom, ready to obey. That is, children were taught to obey the rules.

Just as sociologists view school's rules and disciplinary procedures as a window on schools' ideal, they also view lack of rules and lack of discipline as indicative of the failure of a school to promote academic and other values. Grant's description of the newly tolerant Hamilton High of the 1970s illustrates. The old consensus on appropriate behavior and rules had broken down with nothing to replace it. The principal explained:

We assumed through the fifties and the sixties that we had a set of rules that applied to everyone when in fact they didn't. The black community was basically compliant with the

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<sup>60</sup> The children also achieved higher levels of academic achievement. Prior to the reforms, the school had performance ratings in math and reading at the bottom of New Haven's public schools.

<sup>61</sup> Comer [1988, p.219].

<sup>62</sup> Comer [1980, p. 118].

expectation of the white community. Then things began to change. Then you get into a situation [where] you say what are the rules? When I started teaching at Hamilton the kids were sent home if they wore dungarees. I laugh [to think we ever had such a rule]. But [in 1970] there were no rules.<sup>63</sup>

A teacher who caught a boy cheating was told that she needed a witness: otherwise it was just her word against his.<sup>64</sup> When the same conscientious teacher gave a student an F for a ghosted paper, she was forced to hand over all her documents to the student's lawyer, who was seeking evidence of prejudicial treatment.<sup>65</sup> A student group, which called itself the Protesters, opposed all infringements on students' rights, including the school prerogative of searching student lockers.<sup>66</sup>

Judicial interpretations of the law governing schools' authority over students reveals changes in attitudes regarding school authority that coincided in time with the changes in the disciplinary system at Hamilton High. In the opinions of the landmark cases, as in our model, public schools have only limited authority to affect students' identity (see Dupre [1996]).<sup>67</sup> The *Tinker v. Des Moines* (1969) and *Goss v. Lopez* (1975) decisions demarcate the break from the traditional view of schools as agents of parents (under the doctrine of *in loco parentis*) with the authority to enforce codes of discipline and mold students' morals and values. These decisions established that students are "persons" under the

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<sup>63</sup> Grant [1988, p.40]

<sup>64</sup> Grant [1988, p. 53].

<sup>65</sup> Grant [1988, p. 53].

<sup>66</sup> Grant [1988, pp. 60-61].

<sup>67</sup> See Dupre [1996] and Essex [1999].

Constitution and do not shed their rights “at the schoolyard gate.”<sup>68</sup> *Tinker v. Des Moines* concerns three students who were suspended after refusing to remove armbands in protest of the Vietnam War. The Supreme Court ruled that the school could not punish the students, since “Students in school as well as out of school are ‘persons’ under our Constitution. They possess fundamental rights which the state must respect....In the absence of a specific showing of constitutionally valid reasons to regulate their speech, students are entitled to freedom of expression of their views.” *Goss v. Lopez* gave an analogous interpretation of students’ rights to due process.<sup>69</sup>

#### *D. Public versus Private Schools*

The modeling above captures the sociological perspective on private versus public schools. Economists and non-economists have both urged public support for private schooling; but their reasoning has been quite different. In *Free to Choose*, Friedman and Friedman [1980] propose privatization and school vouchers as an antidote to the agency problems inherent in governmental monopoly schools. Chubb and Moe [1988], who are political scientists, advance a different argument for privatization. They see private school administrators as having greater freedom to set goals and mobilize resources to achieve them. Chubb and Moe [1988, Tables 4 to 8] support their view with data from the Teachers and Administrators Survey supplement to *High School and Beyond*. Batteries

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<sup>68</sup> Dupre [1996, p.54].

<sup>69</sup> See Dupre [1996, p. 57 ff]. The plaintiffs participated in a demonstration in the school auditorium, and were suspended after the fracas that developed when a police officer dragged one of them out of the auditorium. The Supreme Court said that the principal had violated the due process clause of the Constitution, which entitled students to either oral or written notice of the charges against them.

of responses show that, compared to their public school counterparts, private school principals have less interference from school boards and other administrators over curriculum, instruction, and discipline. They face less constraints on school policy and procedures concerning personnel, and hiring and firing. They have more support from parents in setting their goals and set greater goal clarity for their schools, as they also have fewer outside goals imposed upon them. In addition, Chubb and Moe show that the private school principals are viewed more affirmatively by their teaching staff, which is just one sign of a school community. In terms of the model, setting goals can be seen as establishing an ideal *s*; the mobilization of resources can be seen as the use of resources to establish a community that will accept these goals. Private schooling is thus seen as relaxing constraints on investments to establish identity.

Bryk and his colleagues [1993] describe in detail how Catholic schools establish such a school community where students accept the school's goals and ideals.<sup>70</sup> These schools make their ideals clear in their statements of philosophy. For example, one school defined its ideal student, who "should be marked by a number of characteristics:...intellectually competent, ...loving,...a person of faith,...[and] committed to doing justice."<sup>71</sup> Each of the desirable characteristics is described in detail. Bryk *et al* describe the arrangements that foster students' acceptance of these ideals (in our model investments in

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<sup>70</sup> Coleman, Hoffer and Kilgore [1982] show that Catholic school students have higher test scores with lower standard deviations than public school students. See Table 6-1, p. 127. The question remains to what extent these differences can be attributed to selection bias or school quality. Altonji, Elder and Taber [2000], who also review the extensive literature on this subject, correct for selection bias by using the bias in the observables to correct for the bias in unobservables. They concentrate their analysis on a sample of students who were in Catholic schools in eighth grade, some of whom continued to Catholic high schools, and some of whom switched to public schools. They find that those who continued in the Catholic schools had considerably greater chance of graduating and attending college.

<sup>71</sup> See Bryk *et al* [1993, p. 146].

*t*). All the teachers assume responsibility for shaping student character and are supposed to be involved in many aspects of students' lives.<sup>72</sup> Lack of specialization makes this feasible, as the English teacher of the morning is likely to be the counselor at lunch time and possibly the soccer coach of the afternoon.<sup>73</sup> Wide participation in school activities, including a greater fraction of students on athletic teams and shared religious activities, foster the school community. This community blurs distinctions between school and home: in the terms of our model, it reduces the social differences *t*. These differences in community between the public schools and the Catholic schools are supported by statistical evidence. From *High School and Beyond* and the associated Administrator and Teacher Survey, Bryk *et al* [p. 284] construct an aggregate index of school community from 23 sub-components, including such items as the likelihood that a teacher will know a given student, an index of students' perceptions of teacher interest, and an index of agreement on goals between teachers and administrators. The value of the aggregate index of community for Catholic schools is 2.35 standard deviations from the public school mean, as, in fact, the Catholic schools were more communal than the public schools for each and every one of the sub-components.<sup>74</sup>

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<sup>72</sup> Bryk *et al* [1993, p. 141]: "Teachers convey an intrusive interest in students' lives that extends beyond the classroom door into virtually every facet of school life. In some cases it extends even to students' homes and families."

<sup>73</sup> Bryk *et al* [1993, p. 141].

<sup>74</sup> The sub-component indices measure : teacher agreement on student goals, reported teacher consensus on beliefs and values, teacher beliefs that students can learn, teacher and administration agreement that students can learn, teacher and administration agreement on standards of discipline, student consensus about teacher role, track and course-taking commonality of students, teacher knowledge of students (in class), percent students involved in extracurricular activities, percent students in leadership roles, percent teachers who obtain help from colleagues, teacher cooperation with colleagues, teacher time planning with other teachers, staff commitment to evaluation, participation in faculty social events, teacher time in extended roles, percent of teachers involved in extracurricular activities, teacher knowledge of students (beyond class), teacher contact with students outside of class, and student perception of student interest.

Peshkin's [1985] account of a Christian school in Illinois provides an extreme example of a private school that reaches into all aspects of a student's life. Parents and children sign detailed contracts, where parents not only grant the school the right to enforce a firm Christian code of discipline, they promise to enforce the school's code at home.<sup>75</sup> The model characterized reduction in *t* as narrowing the gap between school and home: this unusual measure brings the home closer to the school ideal.

These descriptions of private schools are very different from the leading educators' descriptions of U.S. public schools. Powell *et al.* [1985] characterize the day-to-day interactions in the *Shopping Mall High School* as governed by *treaties*. Teachers let students behave as they please, and students reciprocate. Teachers must know the limits of involvement with students: In the new Hamilton High, "Teachers should express a personal concern about student problems but should back down if students felt that their privacy was invaded."<sup>76</sup> Sizer [1984] explains that, in contrast to Catholic school teachers, public school teachers are viewed as specialists. As a result student-teacher relationships are limited. Too many students pass through a public school teacher's day to take much notice of more than a handful.<sup>77</sup> This lack of intensive contact may be mainly due to lack of resources, but it is also exacerbated by the philosophy of the public school high schools. Staff typically consider themselves responsible only for the aspects of a student's development that corresponds to their expertise. These

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<sup>75</sup> See Peshkin [1985, p. 90].

<sup>76</sup> Grant [1988, p. 106].

<sup>77</sup> Eccles and Wigfield's [2000] review of schools' influences on motivation and achievement discusses the importance of close teacher-student relationships for a sense of school community and decreased student alienation, particularly during the transition from elementary to junior high school.

schools are then described by the model in the previous section. Each school is divided into different sections with different ideals.

### *V. Black-White Differences in School Attitudes and Achievement*

Our emphasis on social categories and identity captures arguments by leading scholars of black education such as Banks, Comer, Delpit, Ferguson, Fordham, Ogbu, and Steele.<sup>78</sup> In Hamilton High we saw a clash between the social backgrounds of the black students and the ideal of the school. Such clashes appear frequently in studies of black-white differences in educational attainment.

Anthropological studies show how school routines and curricula can convey to black students that there is something “wrong” with them and their background. Delpit’s classroom accounts show, for example, how teachers’ presumption of superiority of standard English can (unknowingly) insult speakers of black dialect. In a reading lesson, a girl renders the text: “Yesterday I washed my brother’s clothes,” as “Yesterday I wash my bruvver close.” The teacher corrects her. But the student has done something far more sophisticated than read: she has translated the passage into her own dialect.

Instead of being praised, the girl is told that she has made a mistake.<sup>79</sup> In microcosm, this incident captures some of the tension between students and schools with socially different ideals. According to

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<sup>78</sup> See for example: Banks and Grambs [1971], Comer [1980], Delpit [1995], Ferguson [1998a,b,c], [2001], Fordham [1996], Ogbu [1971], and Steele and Aronson [1998].

<sup>79</sup> Delpit [1995, pp. 58-59]. Delpit believes teaching standard English is especially important in poor Black neighborhoods. She suggests, for example, that English be taught as drama. Delpit [1995, p. 51] also relates the following interchange between a teacher and a four-year-old Black boy:

Teacher: Good morning, Tony, how are you?

Tony: I be’s fine.

Teacher: Tony, I said, How *are* you?

Tony: (with raised voice) I be’s *fine*.

Teacher: No, Tony, I said *how are you?*

Tony: (angrily) I done told you I *be’s fine* and I aint telling you no more.

Ogbu [1997] in neighborhoods where Black dialect is the common language, use of the “correct” English of the schools is considered demeaning to the speaker and also an insult to other members of the community. In the words of one parent in such a neighborhood in Oakland, California: “(We) get very angry (when someone pretends) to be white by talkin' proper....and to see somebody else who's black actually put it down and try to hide it.”<sup>80</sup> These feelings, Ogbu argues, lead to an “oppositional culture” on the part of black students.<sup>81</sup>

Our interpretive model captures this possibility of opposition but also suggests a potential answer to a puzzle regarding black students’ attitudes toward school. If black students are angered by school culture, they should have worse attitudes toward school than white students. The existing evidence suggests the contrary. Cook and Ludwig [1997] have shown that, compared to non-Hispanic whites, blacks have about the same expectations for educational attainment (high school, college, etc.) and about the same school attendance and levels of effort.<sup>82</sup> Table 3, with slightly different tabulations from *High School and Beyond*, shows blacks with better school attitudes than whites. On average compared to whites, blacks are less likely to “dread English class,” less likely to “dread math class,” more likely to perceive “school spirit as excellent,” more likely to report a “positive attitude toward self” and much more likely to “like working hard in school.” These findings are surprising in view of the literature cited above and the persistent black-white gap in test scores (Jencks and Phillips [1998]).

The possibility that schools adjust their curriculum and ideal to their student body yields an

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<sup>80</sup> Ogbu [1997, pp. 29-30].

<sup>81</sup> See also Fordham [1996].

<sup>82</sup> See also Mickelson [1990].

explanation for this seeming paradox that is consistent with the findings of Cook and Ludwig and the tabulations in Table 3. In the model of Section III schools adjusted  $s$  so that more students will identify with the school. In this case, it is likely that schools with a majority white (black) student population emphasize an ideal that conforms to their white (black) students. In this case it is likely that black students, for example, are much more likely to “dread” English class and math class in white schools than in black schools, with the reverse for white students. Table 4 shows that when we divide the High School and Beyond sample accordingly, blacks in almost totally white schools are significantly more likely to dread English and math than their counterparts in all-black schools. Symmetrically, white students in almost totally black schools are more likely to dread English; similarly, they also have a positive (although statistically insignificant) coefficient on the likelihood of dreading math relative to their peers at all white schools.<sup>83</sup>

## *VI. Conclusion*

This review brings together the economics of education with the sociological perspective on the same subject. Sociologists see students’ motivations as related to identity and their behavior, which includes their effort in academic pursuits, as dependent on the extent to which they identify with their schools. This perspective focuses on variables – identity, social categories, and school prescriptions – that have been beyond the purview of the economic theory of education. Regarding motivations, for example, the sociological perspective on education captures reasons why students from certain

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<sup>83</sup> There could, of course, be other theories, such as selection bias that could explain these facts.

backgrounds tend to do poorly in school, as in the resistance of the lads and the *vatos* to their respective schools. Regarding policies, this theoretical framework gives general reasons why some school reform programs work while others fail. Our models provide a framework in which to compare and contrast the economic and the sociological views of education. This framework embodies many facets of schools and of educational policy that are beyond current economic modeling. It captures easily the sequence of events at Hamilton High, the implications of school discipline and changes in the legal status of students, the success of notable school reform experiments such as CPESS and the Comer schools, the tradeoffs in the *Shopping Mall High*, and arguments of non-economists in favor of school vouchers and charter schools.

Furthermore, this framework synthesizes economic and non-economic perspectives on education. Our last model focused on the use of school resources to change student identities. The model thus combines the fundamental concern of economists – the allocation of resources – with a basic concern of education scholars – the dependence of students’ achievement on the gap between their own self-images and the person the school intends them to be. In our reading of the non-economic literature, we were struck by the absence of comment on the role of resources in schooling. Consider three examples. In Powell *et al*’s account of *Shopping Mall High*, a defining moment occurs when a teacher fails to reprimand a student for complaining about an assignment. The authors consider this response as a failure to set standards and change the student’s own expectations of what she could achieve: in the language of our models she failed to promote an academic ideal. But straightforward economics offers another interpretation: the teacher is incompetent or lazy. If incompetent, the school lacks resources; if lazy, she lacks the right incentives. Descriptions of CPESS and the Comer Schools

similarly fail to consider the exceptional resources available to these schools, not in terms of budget, perhaps, but in terms of exceptional teaching and administration.

The perspective offered by our models is thus consistent with the view of Hanushek [1986] and Ferguson [1998b] that resources, especially in the form of high teacher quality, are critical ingredients for school reform. But the sociological perspective says more. It says that the resource use is likely to be ineffective when students' backgrounds are antithetical to the academic values that schools should promote and the schools are constrained against investing in identity.<sup>84,85</sup>

The synthesized economic-sociological perspective can help explain some surprising results regarding resource use. Krueger and Whitmore [1999] examine the effects of small class size in Tennessee's Star experiment. Students in grades K to 3 were randomly assigned to small classes. During this time, black and free-lunch subjects had large and statistically significant gains in the Stanford Achievement Test. After returning to normal-sized classes, these gains disappeared. But these students must have been changed by their experience. In high school, blacks who had been in the small classes were twenty-five percent more likely to take college entrance exams (ACT or SAT) than control groups.<sup>86</sup> The perspective of this review suggests a possible explanation: the familiar environments afforded by small class sizes trumped these students' tendency to view school as a place for others, rather than for them. Otherwise it is hard to see why almost a decade later they were more

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<sup>84</sup> On average teachers with greater academic skills will be better motivated themselves, and will thus more naturally motivate their students.

<sup>85</sup> Mirel [1999] has documented, in the case of Detroit, the decline in the resources available for an ever more difficult task in maintaining a pro-education, pro-academic morale for the period 1930 to 1980.

<sup>86</sup> 40.2 percent compared to 31.7. Krueger and Whitmore [1999, p. 11].

likely to see themselves as suitable candidates for colleges requiring entrance exams. This interpretation of the role of small class size coincides with Sizer's [1984] claims about teachers and student self-image. The typical U.S. high school is unable to affect student character when teachers meet with 120 students every day,<sup>87</sup> making close student-teacher relations all but impossible.

This synthesis between the sociology and the economics of schooling points to important areas for economic research. Econometricians have used existing data to tease out the effect of changes in resources on educational attainment. These estimates, however useful for education policy, leave many questions unanswered: especially, why these estimates sometimes show quite significant and other times negligible effects. As we have seen, the sociological approach, based mainly on ethnography, suggests that these differences in estimates occur because of the complementarities between school resources and student identity. Thus the sociological approach offers an explanation, as it also frames the possible answers, for one of the leading questions in the economics of education.

In closing we should mention two important omissions from this review and from its theoretical framework. We have focused on the identity and behavior of students, but the motivations of teachers and administrators are also keys to the success of different schools. As we saw briefly in the accounts of CPESS, the teachers and principal identified with the goals of the school. Indeed they created them. The committed Catholic School teachers and administrators, described by Bryk *et al*, contrasts with the disengaged public school teacher, described by Sizer.<sup>88</sup> Thus the extent to which teachers identify

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<sup>87</sup> Sizer [1984, p. 97].

<sup>88</sup> See Bryk *et al* [1993] and Sizer [1984]. Parents' and administrators' identities also play a role in the operation of the school. Comer [1980] and Ogbu [1997] emphasize the role of parents in their children's identification with or against school.

with their school's mission may be as important as differences in student motivation in explaining the gap in performance between the two systems.

Second, reflecting our own bias as economists, our models assumed that schools maximize their students' marketable skills. But skills are only one of the goals of some schools and of the parents who choose them. Religious schools, for example, often eschew economic goals in favor of religious goals. In some cases, they view their primary mission as the separation of the saved from the damned, as suggested by the fears of the principal in Peshkin's ethnography: "The devil's crowd [the unconverted] is after our kids."<sup>89</sup> A similar desire for separation lay behind the voucher-supported private academies established (unconstitutionally) in the wake of *Brown v. Board of Education of Topeka, Kansas* (Henig [1993]).<sup>90</sup> The goals and curricula of public schools are the product of elected school boards; the nature of these schools, their ideals, may then derive from the political economy of a community.<sup>91</sup> If schools' goals include promoting certain ideologies, school choice may be neither skill-increasing nor ideologically neutral.<sup>92</sup>

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<sup>89</sup> See Peshkin [1985, p. 289].

<sup>90</sup> Some African-American charter schools also have separatist teachings (George [1992]).

<sup>91</sup> See Foley [1990] for school board battles and the history of Anglo and Mexican-American relations in the West Texas town he studied. See also the above-referenced material on "multicultural" curricula. Many current education policies, including vouchers, sex education in public schools, bilingual instruction, etc. are being determined at the ballot box.

<sup>92</sup> The political economy model of Kremer and Sarychev [1998] deals nicely with the issue of ideological choice in public and private schools. In their model parents choose among schools that promote different ideologies. After their education, people with different ideologies have less gains from trade. Parents want their children to be like them ideologically, but they also want their children to be able to communicate with others for economic gain. A school's ideal in our descriptive model is similar to school ideology in Kremer and Sarychev, and our model produces a related trade-off. Schools interested in students' skills have a reason to choose the ideology of the dominant culture because that is the idiom of commerce, but they have reason to mirror their students' preferences. Our description of school reform which empowers investments in identity and relaxes the public school constraint in these investments yields different analysis of the potential benefits and costs of school privatization. Consider the

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seeming paradox in the Netherlands of ideological homogeneity and private schooling, which Kremer and Sarychev explain as the lucky draw from multiple equilibria. In our descriptive model, private schools will result in more homogeneity than public schools if parents care sufficiently about children's skills. Private schools will devote resources, " , to reduce any conflict between students, identity and the dominant culture, and then choose an ideal, s, that conforms to the dominant culture as well. In contrast, constrained public schools must mimic the heterogeneity already existing in society. Friedman [1955] discusses the issue of school ideological concerns.

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**Table 1**  
**Attitudes of Students by Social Category: Odds Ratio from Logit Regressions**

Independent Variable \ Dependent Variable: Social Category	Positive Attitude Toward Self <sup>e</sup>	Depressed <sup>f</sup>	Think I Am No Good At All <sup>g</sup>	School Spirit Excellent <sup>h</sup>	View School Discipline as Fair <sup>i</sup>	Dread English Class <sup>j</sup>	Dread Math Class <sup>k</sup>	Taken ACT or SAT <sup>l</sup>	Bored a Lot <sup>m</sup>	Like Working Hard at School <sup>n</sup>	Disappointed if Do Not Go to College <sup>o</sup>
Nerds <sup>a</sup> N=19018	1.32** (.03)	.74** (.04)	.80** (.03)	.99 (.02)	1.33** (.05)	.64** (.02)	.68** (.02)	2.24** (.06)	.84** (.03)	1.82** (.03)	2.34** (.05)
Athletes <sup>b</sup> N=25528	1.37** (.03)	.65** (.03)	.95 (.03)	1.33** (.03)	1.21** (.04)	.90** (.02)	.86** (.02)	2.79** (.07)	.77** (.02)	1.16** (.02)	1.58** (.03)
Leading Crowd <sup>c</sup> N=42230	2.09** (.05)	.46** (.02)	.50** (.02)	1.33** (.03)	1.19** (.05)	.71** (.02)	.92** (.03)	1.28** (.03)	.58** (.02)	1.41** (.03)	1.50** (.03)
Burnouts <sup>d</sup> N=9279	.93** (.02)	1.75** (.08)	1.88** (.07)	.90** (.02)	.76** (.04)	1.75** (.06)	1.50** (.05)	.86** (.02)	1.47** (.05)	.49** (.01)	.54** (.01)

Source: High School and Beyond. <sup>a</sup>Nerd: took advanced English or advanced math course; <sup>b</sup>Athlete: participated in varsity sports in senior, in varsity or other athletic teams, if junior; <sup>c</sup>Member of Leading Crowd: Regards self as popular; <sup>d</sup>Burnout: had disciplinary problems in school in last year; <sup>e</sup>Positive attitude toward self: agrees strongly with statement "I take a positive attitude of myself"; <sup>f</sup>Depressed: Respondents (sophomores only) felt depressed or unhappy a lot in past few weeks; <sup>g</sup>Think I am no good at all: Strong agreement with statement "At times I think I am no good at all"; <sup>h</sup>View discipline as Poor: respondent rates effective discipline as poor; <sup>i</sup>Respondent rates school spirit as excellent; <sup>j</sup>Respondent rates fairness of discipline as excellent; <sup>k</sup>Respondent answers true to: Do you dread English class? <sup>l</sup>Respondent answers true to: Do you dread math class?; <sup>m</sup>ACT or SAT: seniors only; <sup>n</sup>Bored a lot: Respondent felt bored a lot in last few weeks; <sup>o</sup>Working hard at school: respondent likes working hard at school; <sup>p</sup>Disappointed if do not go to college: agreement with statement "I will be disappointed if I do not go to college".

a, b, c, d, are the dependent variables; each of them is regressed on the independent variables (e, f, g, h, i, j, k, l, m, n, o) one-by-one; standard errors are in parentheses; \*\* indicates significant at 1% significance level. Example: Odds Ratio (OR) = Odds for depressed(Nerd)/Odds for depressed (non Nerd)=.74; where Odds for depressed=probability of depressed/probability of not depressed; logit (p) = a + bX; OR = e<sup>b</sup>.

**Table 2**  
**Socio Economic Status of Parents and Social Category:**  
**Odds Ratio from Logit Regressions**

Dependent variable: Social Category	Nerds <sup>a</sup> N=19018	Athletes <sup>b</sup> N=25528	Leading Crowd <sup>c</sup> N=42230	Burnouts <sup>d</sup> N=9279
Independent Variable: SES by Quintile <sup>e</sup>				
Top	2.07** (.05)*	1.71** (.04)	1.56** (.04)	.66** (.02)
Fourth	1.17** (.03)	1.16** (.02)	1.29** (.04)	.85** (.03)*
Third	.93 (.02)	1.03 (.02)	1.06* (.03)	.97 (.03)
Second	.71** (.02)	.84** (.02)	.92** (.02)	1.11** (.03)*
Bottom	.57** (.01)	.57** (.01)	.56** (.01)	1.54** (.04)

Source: High School and Beyond. <sup>a</sup>Nerd: took advanced English or advanced math course. <sup>b</sup>Athlete: participated in varsity sports in senior, in varsity or other athletic teams if junior; <sup>c</sup>Member of Leading Crowd: Regards self as popular; <sup>d</sup>Burnout: had disciplinary problems in school in last year. <sup>e</sup>Duncan index of parents' socioeconomic status from parents' survey. Standard errors are reported in parentheses; \*Significant at 5% level.; \*\*significant at 51% level.; example: Odds Ratio (OR) = Odds for Nerd (bottom quintile)/Odds for Nerd (not from bottom quintile) = .57, where Odds for Nerd = probability of Nerd/probability of not Nerd; logit(p) = a + bX; OR = e<sup>b</sup>.

**Table 3**  
**Attitudes of Students Black/White: Odds Ratio from Logit Regressions**

Independent Variable \ Dependent Variable	Positive Attitude Toward Self <sup>e</sup>	Depressed <sup>f</sup>	Think I Am No Good At All <sup>g</sup>	School Spirit Excellent <sup>h</sup>	View School Discipline as fair <sup>i</sup>	Dread English Class <sup>j</sup>	Dread Math Class <sup>k</sup>	Taken ACT or SAT <sup>l</sup>	Bored a Lot <sup>m</sup>	Like Working Hard at School <sup>n</sup>	Disappointed if Do Not Go to College <sup>o</sup>
	Male										
Black	2.27** (.09)	1.51** (.15)	1.12 (.09)	1.13** (.05)	1.03 (.07)	.55** (.04)	.86* (.05)	.90* (.04)	1.14 (.08)	2.23** (.09)	1.78** (.08)
White	.44** (.02)	.66** (.07)	.89 (.07)	.88** (.04)	.97 (.07)	1.83** (.12)	1.16* (.07)	1.11* (.05)	.88 (.06)	.45** (.02)	.56** (.02)
Female											
Black	3.65** (.13)	1.52** (.11)	.84* (.06)	1.15** (.04)	1.28** (.09)	.67** (.04)	.73** (.04)	.86** (.04)	1.39** (.08)	2.04** (.08)	2.43** (.10)
White	.27** (.01)	.66** (.05)	1.19* (.08)	.87** (.03)	.78** (.05)	1.49** (.09)	1.37** (.07)	1.16** (.05)	.72** (.04)	.49** (.02)	.41** (.02)

Source: High School and Beyond. <sup>a</sup>Nerd: took advanced English or advanced math course; <sup>b</sup>Athlete: participated in varsity sports in senior, in varsity or other athletic teams, if junior; <sup>c</sup>Member of Leading Crowd: Regards self as popular; <sup>d</sup>Burnout: had disciplinary problems in school in last year; <sup>e</sup>Positive attitude toward self: agrees strongly with statement "I take a positive attitude of myself"; <sup>f</sup>Depressed: Respondents (sophomores only) felt depressed or unhappy a lot in past few weeks; <sup>g</sup>Think I am no good at all: Strong agreement with statement "At times I think I am no good at all"; <sup>h</sup>View discipline as Poor: respondent rates effective discipline as poor; <sup>i</sup>Respondent rates school spirit as excellent; <sup>j</sup>Respondent rates fairness of discipline as excellent; <sup>k</sup>Respondent answers true to: Do you dread English class? <sup>l</sup>Respondent answers true to: Do you dread math class?; <sup>m</sup>ACT or SAT: seniors only; <sup>n</sup>Bored a lot: Respondent felt bored a lot in last few weeks; <sup>o</sup>Working hard at school: respondent likes working hard at school; <sup>p</sup>Disappointed if do not go to college: agreement with statement "I will be disappointed if I do not go to college".  
\*Significant at 5% level; \*\*significant at 1% level. Example: Odds Ratio (OR) = Odds for Depressed (Black Male)/Odds for Depressed (non-Black Male)=1.51, where Odds for depressed = probability of depressed/probability of not depressed; logit (p) = a + bX; OR = e<sup>b</sup>.

**Table 4.**  
**Coefficients from Logit Regressions for Dread English/Dread Math**  
**By Black/White and Racial Composition of School**

	Dread English <sup>d</sup> N=2995	Dread Math <sup>e</sup> N=3011	Dread English N=19727	Dread Math N=19678
	Black <sup>f</sup>		White <sup>f</sup>	
All White in School <sup>a</sup>	.76* (.34)	.72* (.32)	–	–
Few Black in School	.24 (.15)	-.11 (.14)	-.10** (.04)	-.08* (.04)
Half Black in School	.18 (.14)	.06 (.13)	-.05 (.05)	.01 (.05)
Mostly Black in School	-.12 (.15)	.02 (.13)	.07 (.09)	.10 (.09)
All Black in School <sup>b</sup>	–	–	1.15** (.31)	.31 (.31)
SES <sup>c</sup>	-.48 (.62)	-.50 (.58)	-3.52** (.23)	-1.52** (.22)
Constant	-1.47** (.12)	-1.09** (.11)	-.77** (.03)	-.77** (.03)

Source: High School and Beyond. <sup>a</sup>No black students in respondents' ninth grade; <sup>b</sup>all black students in respondents' ninth grade; <sup>c</sup>Duncan index of parents' socioeconomic status from parents' survey (measure of SES is the Duncan index times 10,000); <sup>d</sup>no black students in respondents' ninth grade; <sup>e</sup>Affirmative response: Do you dread English class?; <sup>f</sup>Inclusive of Hispanics by race.

Standard errors are reported in parentheses. \*\*Significant at 1% significance level; \*significant at 5% significance level. Regressions for Black: All black in school was omitted dummy. Regressions for White: All white in school variable was omitted dummy. Regression: logit(p) = a + bX.