An Economic Theory of Academic Engagement Norms: The Struggle for Popularity and Normative Hegemony in Secondary Schools

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Abstract

[Excerpt] Why and how do groups create norms? Kenneth Arrow proposed that "norms of social behavior, including ethical and moral codes, ….are reactions of society to compensate for market failure". This internalize the real externalities explanation for norms is also standard among rational choice theorists in sociology. The situation becomes more complex when we recognize some actions create positive externalities for some individuals and negative externalities for others. Often this results in no norm being established. However, sometimes one segment of a social system has normative hegemony and enforces norms that enhance their power and prestige at the expense of other groups. Norms regarding caste in India, for example, were functional for Brahmins but humiliating for Harijans. Caste and status norms of this type will also be referred to as "Honor us; Not them" norms. Such norms arise when one group is much more powerful (has greater ability to enforce their preferred social norm) than other groups and it imposes its will on others. An additional requirement is that the people who oppose the norm established by the dominant group must be unable or unwilling to leave the social system in which the norm operates.

Keywords

norms, groups, sociology, social system, hegemonies, behavior

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"Every man passes his life in the search after friendship"
--Emerson, "Friendship," Essays: First series (1841)

"We habitually bestow both praises and blame on others,
whilst we love the former and dread the latter when applied to ourselves"
--Charles Darwin, <u>Descent of Man</u>, 2nd Edition (1882) Chap. 5, p 131

　　　　Human beings are social animals. An important share of our time and money is devoted to attracting favorable attention and the respect of others. We live, work and play in groups and care a great deal about what our associates think of us (Stouffer et. al 1949). Our behavior is shaped by how we anticipate others will react. Young people are particularly sensitive to these pressures (Brown, Eicher and Petrie, 1986).

　　　　The evaluative reactions of our friends, coworkers and neighbors are predictable because they are generally governed by the norms of our society, community, tribe, clique or work group. A norm concerning a specific focal action exists when "there is a consensus in the social group that the right to control the action is held by others" and not by the actor... "Those holding a norm, claim a right to apply sanctions and recognize the right of others holding the norm to do so (Coleman 1990, 243)." In order for enforcement to be feasible, the focal action must be visible to others (or a significant risk of discovery must exist) and the threat of punishment or the prospect of reward must be credible. Since norm enforcement is a public good, social groups must devise a means of inducing members to sanction those who violate a norm. Proscriptive norms that have survived the test of time typically impose three obligations: (1) avoid focal action A, (2) sanction group members who do A and (3) sanction group members who do not sanction norm violators. That is why philosophers urge us to admonish friends who go astray. "Those friends are weak and worthless that will not use the privilege of friendship in admonishing their friends with freedom and confidence, as well of their error as of their danger (Francis Bacon in Edwards p. 223)." That is also why honor systems not only require individuals to act honorably but also to report cheating by others subject to the honor code.

　　　　Social norms that impose altruistic punishment obligations (#2 and #3 above) to enforce a norm powerfully replicate in later generations of the population and do so under quite general conditions (Axelrod 1986, Boyd 1992, Seith and Somanathan 1996, Bendor and Swistak 2001, Henrich and Boyd 2001, Boyd and Richerson 1985, 1992, 2005; Fehr and Gachter 2002; Fehr,

Fischbacher and Gachter 2002; Fehr and Fischbacher 2003, 2004; Boyd, Gintis, Bowles and Richerson 2005). These studies show that social norms enforcing cooperation in prisoner's dilemma games have a very robust ability to repel invasions by non-cooperating intruders when third parties (not just the victim of non-cooperation) impose sanctions on non-cooperators. Excluding norm violators from the social group is both an effective deterrent (Frank, Gilovich and Regan 1993; Kitcher 1993) and an effective way of preventing dissent from undermining the group's norms (Hirshleifer and Rasmusen 1989, Riedl and Ule 2002). Structured populations (e.g. the clique structure of middle schools) with conformist tendencies facilitate the spread of group-beneficial norms (Boyd and Richerson 2002, Henrich and Boyd 2002).

Norm enforcement need not be everyone's job. When those who benefit most from a particular norm are able to punish norm violators at little cost to them selves (or are compensated for their enforcement actions by group members), norm enforcement becomes self-organizing and a critical mass of norm followers and enforcers develops (Oliver, Marwell and Teixeira 1985, Oliver and Marwell 1988, Macy 1990). More important is maintaining the salience of the norm by sanctioning in public and giving publicity to sanctioning incidents (Elster 1999, Xiao and Houser 2006). Fehr and Gachter's (2000) four-person public goods experiments found that some players take advantage of costly opportunities to punish free riders and that this reduces free rider behavior. The propensity of humans to altruistically punish those who violate norms may be hard wired. A study monitoring neural activity (D.J. de Quervain et al. 2004; Fehr, Fischbacher and Kosfeld 2005) using positron emission tomography found that punishing people who violate social norms of fairness activate the same reward circuitry of the brain that is stimulated by sniffing cocaine or seeing a beautiful face. A combination of rewards and punishments appears to be even more effective than either one alone at promoting sharing in the proposer-responder game (Andreoni, Harbaugh and Vesterlund 2002).

Why and how do groups create norms? Kenneth Arrow proposed that "norms of social behavior, including ethical and moral codes, ...are reactions of society to compensate for market failure (Arrow 1971, 4)." This internalize the real externalities explanation for norms is also standard among rational choice theorists in sociology (Coleman 1990; Hechter 1987). The situation becomes more complex when we recognize some actions create positive externalities for some individuals and negative externalities for others. Often this results in no norm being established. However, sometimes one segment of a social system has normative hegemony and enforces norms that enhance their power and prestige at the expense of other groups. Norms regarding caste in India, for example, were functional for Brahmins but humiliating for Harijans. Caste and status norms of this type will also be referred to as "Honor us; Not them"

norms.   Such norms arise when one group is much more powerful (has greater ability to enforce their preferred social norm) than other groups and it imposes its will on others.   An additional requirement is that the people who oppose the norm established by the dominant group must be unable or unwilling to leave the social system in which the norm operates.

Akerlof and Kranton (2002) have analyzed what happens when individuals choose (or are assigned to) their subculture (e.g. church, community, guild, profession, crowd or clique)-- and they adopt the norms and values of that subculture.   Associated with each subculture (or identity in AK's terminology) is an ideal type—stereotypical attributes and valued behaviors that characterize the group's members.   "Individuals then gain or lose utility insofar as they belong to social categories with high or low social status [in the larger social system] and their attributes and behavior match the ideal of their category (2002 p.1168)."   "A student's primary motivation is his or her identity and the quality of a school [from the student perspective] depends on how students fit in a school's social setting (p.1167)."   Students with physical and social attributes that bring them close to the 'ideal' of a particular clique or crowd tend to join that group and then try to "fit in" by conforming to it's norms.   Since different identities prescribe different levels of academic engagement, a student's effort and achievement depends on her chosen identity— Jock, Nerd, Popular, Burnout—as well as her family background and ability.

Akerlof and Kranton do not try to explain what determines the ideals and norms that characterize an identity, why some identities have higher prestige in the larger social system than others, how people choose their identity, how new entrants into a group are induced to conform to it's norms/values and how norms/values evolve in response to changes in the environment.   This paper proposes an evolutionary rational-choice theory of peer group solidarity in secondary schools that provides answers to these questions.   We briefly outline it in the next three paragraphs.

Students form groups with strong independent sub-cultures in order to produce and consume excludable jointly produced services (Hechter 1987).   These services include friendship, emotional support, socializing, gossip, parties, competitions between schools, prestige from belonging to a high status clique, setting norms for academic engagement, pressuring teachers to "go easy" and punishing group members who violate peer norms.[1]   Each crowd or clique produces a somewhat different package of services and guides its production process by a set of norms designed to generate that package of services.   Criticizing or publicly violating your group's norms will be sanctioned by other members and can result in expulsion.

School wide norms influence crowd norms, define the pecking order of school crowds and influence behavior when students from different crowds mix.   They are largely inherited from previous generations of students, but the transmission mechanism is the popular or

leading crowds.   Older members of leading crowds teach them to others by setting an example (i.e. modeling the behavior that others are to follow), admitting a few 'norm conformers' into the leading crowd and harassing (or encouraging others to harass) students who engage in proscribed behavior and/or who publicly oppose their normative hegemony. The central role of popular crowds in establishing and enforcing school norms results in school wide norms honoring activities and traits (athletic prowess, popularity with the opposite sex, partying, drinking, grades good enough to get into college) that are characteristic of these crowds. School wide norms are thus serving two purposes: (a) to induce cooperative behavior to achieve goals most students have in common (e.g. no sucking up to teachers) and (b) to reinforce the power and serve the interests of leading crowds (the "We're cool, honor us, not them" norms). Some norms serve both purposes simultaneously. Others (e.g. no squealing on classmates) effectively empower the student vigilantes who enforce peer norms.

Some students negotiate the pressures to avoid violating peer norms by becoming 'code switchers.' School, crowd and clique norms influence behavior at school. When not monitored by school peers, code switchers behave differently. Akerlof and Kranton, by contrast, assume that students internalize their 'Identity' and act in conformity with its prescriptions even when they are not being monitored. We agree that group norms are often internalized. But the values that get internalized typically evolve out of norms originally supported by monitoring and expectations of rewards and punishments.   We argue that the 'cooperative' behavior (no ratting on classmates, no sucking up to teachers, etc.) that is crucial to powerful independent peer subcultures would not survive through many student generations if monitoring, rewards for conforming (e.g. being able to hang out with high prestige peers invitations to parties,) and altruistic punishment of norm violators were not present or at least available. An important consequence of analyzing student peer cultures as micro social systems guided by norms is that the character of the norms that guide student behavior become an endogenous outcome of the model.   The theory makes predictions about individual behavior, about the reactions (favorable or unfavorable) of peers to that behavior and about the character of school wide norms. Since violating school norms generates harassment and social exclusion, we can infer the norms by analyzing who gets harassed a lot and who does not.   Micro data on the incidence of peer harassment, intimidation and violence is available and its analysis will provide a test of the informal theory we developed from interviews and the voluminous ethnographic literature.

Method: We began our study of peer norms in secondary school by reading the extensive quantitative literature on peer cultures in sociology, psychology and education. We also read as many ethnographic studies of student peer culture and teacher memoirs as we

could find (Adler and Adler, 2003, Anderson 1999, Baldacci 2004, Blanco 2003, Cusick 1973, Eder 1995, Eckert 1989, Everhart 1983, Foley 1990, Fordham 1996, Freedman 1990, Gabarino and deLara 2002, Grant 1988, Hersch 1999, Johnson (1992, 1995), Landau 1988, Larkin 1978, McCourt 2005, Metz 1978, Ogbu 2005, Pollack and Schuster 2000, Powell, Farrar and Cohen 1985, Sacher 1991, Simmons 2002, 2004, Sizer 1984, Wiseman 2002). In the fall of 1998 we recruited and trained seven Cornell students to conduct interviews during winter break of 10th graders in eight secondary schools serving predominantly white upper-middle class suburbs in New York State.[2] We felt we would get a more accurate picture of peer cultures if we matched interviewers and respondents on gender. The time available for interviewing was limited so, we were able to study both genders in only one school, the culture of male students in another school and the culture of female students in six schools. A short description of the high schools and middle schools included in the qualitative data collection is available in the Appendix.

The next stage of the theory development process was devising a four-page questionnaire on the attitudes and behavior of secondary school students and recruiting schools to administer it to their students. Over the course of the last seven years over 110,000 middle school and high school students in about 325 schools have completed one of three versions of the peer culture survey.[3] The analysis presented in this paper uses data collected after January 2000 from 75,000 students using the second and third version of the Educational Excellence Alliance's Student Culture survey reprinted in Appendix B.

The descriptions and hypotheses developed from the qualitative research and from looking at responses to the EEA student culture survey have been used to develop a theory of why crowds and schools have the norms that they have, how students choose their crowd, how school-wide and crowd norms are enforced by harassment and other pressures and how these norms influence the school's academic climate, student engagement and study effort. Since our interviews and surveys were conducted in public schools serving racially integrated or predominantly white upper-middle class suburbs, small cities and rural areas, the theory will probably require revision before it can be applied to schools in poverty neighborhoods and schools where nearly all students are Black or Hispanic. The first section of the paper gives a verbal exposition of our theory of peer harassment's role in enforcing the norms of the student peer culture and illustrating them with stories and quotations taken from the ethnographic literature, our interviews and our survey data. Section 2 uses data from the Educational Excellence Alliance's Survey of Student Culture to analyze the relationship between pro-learning attitudes and behaviors and peer harassment. [Section 3 presents a mathematical model that tries to capture the essence of our empirical findings. Conclusions and policy implications are presented in section 4 and 5.

I. How Social Norms are established in Middle School—
A verbal presentation of the theory illustrated with anecdotes.

> *"To children in school, the most important people in the classroom*
> *are the other children. It is their status among their peers that*
> *matters most to them—that makes the school day tolerable or turns it*
> *into a living hell."*
> --Judith Rich Harris, The Nurture Assumption, 1998, p. 241

Students entering middle school will spend up to 2000 hours annually for seven years in the company of their school peers. Not surprisingly they are strongly motivated to fit in and to gain a respected role in the school's social system. The norms of middle school peer cultures are different from the norms that prevail in elementary school.[4] Sixth graders learn their new school's norms by noting and trying to copy the traits and behaviors of students who are respected by older students and avoiding the traits and behaviors of students who are frequently harassed.[5] The norms of the peer culture have two functions: promoting peer solidarity [often in opposition to adult leadership] and defining who has high status and who does not [the "we're cool, so honor us, not them" norms] .

Peer Solidarity Norms (Sanctioning "Anti-Peer" Behavior):

> One of the first norms new arrivals are taught is 'don't ask adults for protection.'
>
> *"I ask them why they tease and they start giggling. My mother has already*
> *tried to call their parents... I don't tell her to call anybody because the next*
> *day they call me a narc. The way we figured it out is that narc probably*
> *means like a tattletale or a squealer (Les quoted by Merten 1996 p. 14)."*

Verbal harassment and bullying occurs outside the earshot of adults. It is now so pervasive and hard to define that most schools are not able to protect individual kids from it.[6]

In many schools they are also taught: "No alliances with teachers." Ethnographer, Don Mertens, asked William and Scott, two 7th grade outcasts at Cronkite Junior High why they and their friend Les were being singled out for harassment:

> *"One thing, he [Les] is more like a teacher's pet. He always hangs around*
> *teachers. That I don't like. I don't know how to say this but it looks like*
> *you look at teachers as your friends. They [one's peers] got to think that a*
> *teacher is not your friend (Scott during 8th grade in Merten p. 19).*
>
> William knew what it took to be popular. As he saw it, one needs to: *"pay no*
> *attention and talk [in class]. Don't listen to the teacher and tell jokes all*
> *day....Yeah, really not pay attention and goof around."* Despite having
> recognized some of the elements that made a person cool...William still
> preferred to be the sort of person he valued.... *"Les Renault is my*
> *friend....Nobody ever really liked us because we like to stay straight.*
> *There's Mr. Muscular and Mr. Cool. We don't like doing that—we're acting*
> *how we want to act....Why can't anyone act themselves in school? I'm a*

> *goodie-goodie.   I want to be straight—I want to do good things in my*
> *life. I don't want to be bad.* (William in the second semester of 7th grade in
> Merten p. 16)."

At the beginning of 8th grade, however, William decided that he didn't *"want to be the little kid*

pushed around any more" and tried to change. He abandoned his friend Scott: *"I act like I don't*

know him. I don't sit with him on the bus...(p. 20)." *"I've been taking a lot of people's*

punishments, to get them out of trouble. Or say they flunk a test. I grade it 100%. It's how

everybody does it. Everybody fits in better. I don't tattle like I used to (Mertens p 19)."   Les

had a different view of William's transformation:

> *"This year he* [William] *does not want to be teased. So what he is doing is*
> *challenging kids who are younger than him to fight. I think it is super stupid*
> *because he didn't like it when everybody was bugging him, so why is he*
> *going around bugging everyone else.* (Les in 8th grade in Merten p. 18*)"*

William's strategy worked. *"Now everybody likes me... I would say I'm in the top 10. I mean*

everything has changed. I know it's the best I've ever felt in my life (William at the end of 8th

grade, p. 21)." Les and Scott's efforts to escape their outcast status were fruitless.

The anti-teacher norms that prevailed at Cronkite Junior High School are not unusual. At a

middle School in Ithaca New York, where children of college faculty accounted for a large share

of the students, boys (but not girls) were <u>not</u> supposed to *"suck up"* to teachers. One student

told us, you avoid being perceived as a *"suck up"* by:

> --*"avoiding eye contact with teachers"*,
> --*"not handing in homework early for extra credit"*,
> --*"not raising one's hand in class too frequently, and"*
> --*"talking or passing notes to friends during class"* [this demonstrates you value
>   relationships with friends more than one's reputation with the teacher],

Most large schools have multiple high status crowd (e.g. jocks, preps, populars)

exemplifying somewhat different normative orientations and many popular individuals have

friendships in more than one of the leading crowds.   As a result, school wide norms are

typically consensus norms that honor all of the activities and signals (achievement in sports,

popularity with the opposite sex, partying, drinking, grades good enough to get into college) that

are characteristic of the school's high status crowds. For most types of achievement—being

athletic, funny, friendly, outgoing, popular and attractive—more is always better. When,

however, it comes to academic engagement, peer culture sets a norm—an optimal level or

range of academic effort—that if adhered to prevents many students from achieving all they are

capable of academically. All-rounders who lead the team on Friday night, party on Saturday

night and get good enough grades during the rest of the week typically sit at the top of the

prestige hierarchy. At the bottom of the prestige hierarchy one finds those who reject and

ridicule consensus norms (Freaks) and those not perceived as successful along the dimensions—e.g. attractiveness, athletic and social skills-- valued by consensus norms and who also deviate from the "Try but not too hard" norm with respect to academic engagement (Burnouts, Nerds and Dorks).

Since cooperative hard working classmates assist my learning[7] and disruptive classmates block my learning,[8] we would expect on a *priori* grounds, that norms would arise sanctioning classroom disruptions and efforts to get the teacher off track. The EEA data suggests, however, that only a minority of the white students in our sample of upper-middle class schools got annoyed when classes were disrupted by classmates. Roughly two-thirds told us that their closest friends did not consider it annoying when other students "try to get teachers off track" or "talk or joke around in class."

James Coleman has observed that: "students who get especially high grades create negative externalities for other students, insofar as the teacher grades on the curve.... .Often a norm arises in this case...; students impose a norm that restricts the amount of effort put into schoolwork (1990 p. 251)." The zero sum nature of academic competition also results from using class rank as a criterion for awarding scholarships and college admission.[9] A second reason why peers often discourage studying by classmates is *rate busting*--the fear that teachers will become more demanding if they sense they can get the class to work harder (Sizer 1984; Powell, Ferrar and Cohen 1985).

Rebecca had recently transferred to Lakeside high school (89 % of graduates attend college) from a competitive private school. Her goal was to be valedictorian. How did classmates react to her? *"Rebecca is really, really smart. But I think* [school work] *is all she does. She only cares about school and she stresses on school way too much. And it gets annoying to people."* Rebecca realized she was unpopular, but gave her situation a positive spin. *"I don't like it here, but the only good thing is that since* [Lakeside] *is so small, you have a better chance at being higher in the class. So maybe, hopefully I'll be valedictorian, and be at the top* (Zuckerman 1998 p. 23). Lakeside's 10th graders saw themselves as reacting to Rebecca's obsessive personality, not to her academic work ethic. But if Rebecca had been obsessed about being the best basketball player, would they have reacted negatively? Probably not. Becoming a better basketball player creates positive externalities by helping Lakeside defeat rival schools. "Often a norm...[arises encouraging] potentially good athletes to devote their energies to interscholastic sports (Coleman 1990 p. 251)." Becoming the valedictorian, by contrast, means someone else in the class does not.

EEA survey responses confirm that being competitive about grades tends to make one unpopular. Fifty-one percent of students said "It's not cool to be competitive about grades." By contrast, only 19 percent said 'It's not cool to frequently volunteer answers or comments in class." and only 15 percent said 'It's not cool to study real hard for tests and quizzes."

"We're Cool, so Honor Us, Not Them" norms

Some interviewees admitted being envious of those getting top grades, but everyone denied that this led them to denigrate the academically engaged. A typical response to a direct question was: *"If you're smart you're lucky; no one considers you a nerd as a result. Everyone wants to get good grades now because of college, so you kind of envy those who do well* (Gelbwasser p.) *."* But when we got people talking, we heard stories that seem to contradict the claim that studious classmates were not denigrated. Robyn, one of the populars at Harbor Edge (where 96 percent of graduates go to college), described "nerds" as "*being very involved with school, asking a million questions in class, and not having much fun in their spare time....If someone asks a question and you're considered a nerd, then people will be like, 'Oh, shut up!' But if you're not* [a nerd], *then no one says anything. It's a double standard.*" Despite her expressed sympathy for the nerds, Robyn said at another point in the interview, *"Well my friends and I always make fun of this one girl; all she does is study. It's like she studies for college already* [10th grade]*—that's so stupid* (Gelbwasser p.) *."* It's not the good grades that get's one targeted for harassment, it's trying excessively hard to get good grades.[10] Indeed, good grades achieved effortlessly, generate a image of high intelligence--something that peers respect.

At Newport Junction, a school where 94 percent of students go to college, Eliza characterized 'dorks' as *"constantly asking questions in class."* This annoyed the other students. She recounted what happened in her English class. *"Nobody likes this girl. She talks and says the stupidest things which makes everyone want to cringe. It gets out of hand, so these boys stood up in the middle of class and shouted, 'You're a loser, just shut up and get out of this class.' The teacher had no control* (Gelbwasser p.).*"* Apparently, in some classes unpopular students are not supposed to play a prominent role in class discussions. When someone stigmatized as a dork tries, they are sanctioned by an altruistic punisher (vigilante). Members of the classroom's socially dominant clique, by contrast, are typically able to speak up without being sanctioned by classmates (Cusick 1973). McFarland's study of classroom peer cultures found "Social standing among classmates and physical attractiveness afford legitimacy in both work and play activities. In contrast, academic status appears to have relevance only for academic affairs and even acts as a mild "stigma" in social activities (2005, p. 240)."

We hypothesize therefore that the "We're cool, Honor us; Not them" norms against nerdy behavior derive from the struggle for social status as well as from efforts to deter rate busting and competition for good grades. Males, in particular, are very competitive at this age.[11] By participating a lot in class, nerds appear to be sparking the envy of the more popular, less engaged students. Consequently, displaying sincere interest in the subject and talking a lot in class can be interpreted as 'show off' and 'suck up' behavior that merits sanction.[12]

Nerd, Dork, Geek and Burnout are denigrated identities at just about every school, but many other types of kids have a similar outcast status and are frequently harassed. Sometimes it's rural kids ('Hicks"), special education students ("Dummies"), gay kids, short kids, fat kids, or unattractive kids.[13] Since our focus is on how norms regarding academic engagement and effort are established, we do not directly address why these traits also generate harassment.

How Norms are Signaled and Enforced

School wide norms are perceived to be and are largely inherited from previous generations of students. Leading crowds, however, play an important role in teaching proper behavior and social norms to incoming students.[14] Many of our interviewees identified with one of the leading crowds and saw its leaders as role models and exemplars of "cool." Their opinions about who and what is "cool" and who and what is "un-cool" were, therefore, quite influential.

Since the primary signal of a student's popularity is who he or she hangs out with, reputation as popular depends on "***being allowed to hang out with them*** [one of the popular crowds]." As one of our respondents said, ***"If you're friends with popular people, you're considered more popular*** (Boynton Middle School)." Inviting someone from outside the crowd to a party or including them in lunchtime conversation may be a small matter to a popular student, but it sometimes has an important positive demonstration effect on that invitee's reputation. Around most popular crowds there are "wannabes" trying to join the crowd and potential "wannabes" who would try if they thought they had a reasonable chance of success. Typically one cannot get into a popular crowd without sponsorship by some of its more powerful members.

"Posers" are individuals or groups who copy the dress, behavior and norms of a higher status crowd, without being a part of that crowd. By adopting the norms and behaviors of popular crowds as their own, "Posers" assist in the transmission of the norms and values of the leading crowds to the wider school community.

Violating a school wide norm damages the reputation of both the individual and the clique he hangs out with. Individual reputations also depend in part on their clique's reputation, so friends pressure each other to avoid behavior damaging to the group's reputation. Consequently, pressure against academic engagement (and against being disruptive) often comes from within

one's own clique. Seventeen percent of EEA respondents reported: "My friends DO NOT want me to study harder than they do." Other students reported the opposite kind of pressure. Twenty-eight percent said: "My friends want me to study harder than I do."

Certain core members of the leading crowds and 'wannabes' trying to be accepted into these crowds typically enforce school norms. Even though she ate lunch with them, Robyn described Harbor Edge's popular crowd as *"the loud ones. Some of them make fun of the dorks and the nerds, and then the rest of them hang out with the meaner people. They're known to act like this; no one will make fun of them, because [they] are afraid they'll be totally abused* (Gelbwasser p.)." Robyn is suggesting that the leading crowds maintain their group's status and the hegemony of their norms, in part, by admitting into their ranks some enforcers who intimidate the rest of the students. Developmental psychologists studying verbal bullying have found that bullies are often among the most popular students in a school and that bullying behavior is positively associated with within group status (Pellegriini, Bartini and Brooks 1999; Rodkin, Farmer, Pearl and Van Archer 2000, Olweus 1993, Juvonen, Graham and Schuster 2003). Video tapes of playground bullying incidents in Canada found that there were bystanders in 84 percent of incidents. Bystanders were coded as respectful of the bully 74 percent of the time and respectful of the victim in 23 percent of the incidents (Craig and Pepler, 1997). When the "meaner people' from high status crowds pick on someone for violating a school-wide norm, the victim typically gets little effective support from their friends--even when the friends share their opposition to the school wide norm that is being enforced.

> *"I get mad at my friends because sometimes they're....afraid that they will be made fun of, too, if they don't follow what the person with all the power does. I really don't care what people think of me, but it makes me mad when my friends just sit there, not standing up for me....They should stand up and say, "No, I don't know why you're saying that about Nick."* (Nick quoted in Pollack and Schuster 2000, p. 119).

The vigilantes' prestige and power advantage is so great, they do not need to outnumber the nerd clique (or other victimized group) at the point of a mocking interaction. Consequently, norm enforcement is successful even when the number of vigilantes is small.

Many students expressed resentment and hostility towards the popular crowds and the 'vigilantes' who enforced school wide norms. When asked if there is a cool crowd at Harbor Edge, Susan responded, *"They seem to think they are. They're usually into sports and*

because they have so many friends, they just think of themselves as popular....They are so obnoxious; they just make fun of others for who they are and I don't think that's right."

At Newport Junction, Kate remarked *"Everyone looks up to* [the populars], *but I don't really know why. There's nothing really different about them except that they hang out with upperclassmen and play sports."* Eliza, a member of the 'populars,' boasted about their snobby reputation, proudly confiding, *"When* [all my friends] *are together, everybody hates us* (Gelbwasser p.)." Note further the resignation of these voices regarding the power of the 'populars.' There are resentments but no budding revolution or even the energy to propose and publicly defend other norms.

Another example of norm enforcement by intimidation and violence is the treatment that Freaks get at some high schools. A Longview High School student told us: *"We were all hanging out...and then a couple of freaks walked by and everybody started throwing things at them, like rocks and stuff...They just kept on walking. They just try to ignore it* (Green p. 14-15, interview was conduced four months prior to Columbine)."

The Freaks publicly scorn the norms of leading crowds, but they are not mounting a serious bid for normative hegemony. Neither are the other deviant groups--Nerds, slackers, burnouts, etc. Why then are they punished so severely? This is the dark side of decentralized punishment of norm violators. There is no way to calibrate punishment to the threat the 'crime' poses to the interests of peers and the leading crowd. The many different people who punish the deviant are unaware of how much punishment has already been meted out. As one would expect with norms that impose the # 3 obligation to punish group members who do not punish norm violators, altruistic punishers are often not motivated by the desire to see 'justice' done. In Merten's view they were trying "...to set themselves apart from the categorical identity [the nerds represented] (p. 14)." They were afraid that otherwise they might be the vigilante's next victim. A student interviewed by Dorothy Espelage and Christine Asiado said, *"Students bully so they*

can be part of a group and they do it so the group will respect them more (2003 p. 8)."

When altruistic punishers enforce norms without due process, the effort to deter and punish norm violations will typically result in many injustices. The system is, however, an effective deterrent. The fear of harassment and humiliation is sufficient to change even deeply held values and bring most behavior into conformity with peer norms.

Consequences

Even when threats of harassment fail to reduce commitment to learning, it has other effects. We asked two Asian-American high school buddies (recently graduated from Ivy League colleges) how the climate affected them:

> Kim. "**Neither of us had a real hard time. We weren't one of those kids who got ridiculed every single day. But we were sort of...**
>
> David—"**Not really there.**"
>
> Kim—"**We overreacted.**"
>
> David—"**People would make fun of you once and you'd close up. If I ignore everybody then they won't make fun of me. They don't make fun of you but you don't get to know people very well doing that. It's socially isolating and if you are socially isolated, people don't interact with you so they can't make fun of you or make friends with you.**"

Their reluctance to socialize made it difficult for them to develop a wider circle of friends and the social skills that would have helped them deal with any harassment they might have encountered. Withdrawing from social contact leaves one even more isolated. Sixty percent of EEA respondents agreed with the proposition "Not spending time to socialize and hang out tends to make you less popular." By contrast, only 18 percent said that "Studying a lot tends to make you less popular."

Many students with strong social, athletic, academic and time management skills are able to achieve both popularity and a high GPA. Typically they are code switchers who affirm the "try but not too hard' norm at school but hit the books when they get home from practice. Often high

levels of effort are kept secret and academic accomplishments down played in order to "fit in" and avoid jealousy. If they enjoy a subject their classmates don't like, they hide their feelings. The strategy is illustrated by Gail's description of how she avoided the ostracism suffered by Sarah:

> *Sarah joined my class after skipping 7ᵗʰ grade. From that point on she was labeled a nerd, and her active membership in the high school band did not do anything to counteract this stereotype....She was a "weirdo," someone who was ignored by the "popular, important" students, unless of course, they had not done their homework the night before. She never had any boyfriends; in fact, boys stayed far away from her. ...She was isolated, the butt of many jokes, and a social suicide object for cool people.....Even as a member of the Scholastic Superstars, a competitive club that competed academically against other schools in Scholastic meets, [she] was not accepted.*
>
> *I was of equivalent academic ability as Sarah, but was not perceived by my peers to be "extremely smart." I had never [gotten a B or less] in my whole life, but I was able to hide my "nerdiness" by surrounding myself with average student girls.... Although my friends knew I did well in school, I always felt guilty that school came naturally to me. Therefore, I never shared my test scores, and if the subject came up, I avoided it.... I was asked to be in the Scholastic Superstars by Sarah and the coach, but that would have been social suicide, so I politely declined the invitation and never said a word to my friends.... I dumbed myself down to get along with others. My grades did not suffer, but I kept them very private. You never saw my papers hanging on the refrigerator door when my friends came over. In essence, I presented myself as less intelligent than I was in order to belong. (Gail [pseudonym] Peer Culture Paper 2005).*

In The Cement of Society Jon Elster observes: "To violate a norm in public shows a disdain for public opinion that is often more severely disapproved of than the norm violation itself (Elster 1999, p. 109)." Gail was aware of this so she hid her academic engagement and success and avoided publicly challenging peer norms against exhibiting engagement and taking pride in academic achievement. Many of the students we interviewed seemed to be pursuing some

version of Gail's 'incognito' self-presentation strategy. They privately disliked the populars but avoided challenging the norms they promulgated. They avoided, for example, hanging out with stigmatized groups—Freaks, Nerds, Geeks, etc--and thus contributed to the power of the ostracism sanction. Hiding ones effort level also serves the goal of establishing an image of high ability and "effortless perfection."

Another large group of students have adopted William's switch to the "leading crowd as role model" strategy casting off nerdy friends and attempting to gain acceptance from leading crowds by demonstrating commitment to its norms. The popularity of the 'incognito' and 'leading crowd as role model' strategies leaves the few students who publicly exhibit pride in academic engagement and achievement isolated, ostracized and unable to influence peer norms outside their group. When the 'brains' group is large and cohesive, they can generate their own social life and enjoy high school. When they are a tiny group with few supportive links to other students, they are likely to be pretty unhappy with their lot.[15]

The theory of school engagement norms just outlined distills and structures the rich descriptions of peer interaction we obtained from published ethnographies and our own interviews. There is a risk, however, that unstructured face to face interviews create a dynamic that distorts as much as it   illuminates. It is, therefore, important to test our ideas in other kinds of data such as the anonymous questionnaires completed by 75,000 students in EEA schools that are analyzed in the next section.

II.   What is the Relationship between Pro-Learning Attitudes/Behaviors and Peer Harassment? An Analysis of data on White Students from the Educational Excellence Alliance's Survey of Student Culture

We now present an analysis of the individual level correlates of peer victimization and harassment for a sample of 37,069 white secondary school students. The measure of peer harassment is the student's estimate of the number of times he is teased, verbally harassed or physically harassed by peers at school over the course of a year. It is the sum of four different kinds of harassment incidents—"I was pushed, tripped or hurt," "Someone threatened me at

school," "I was insulted, teased or made fun of to my face," and "I was insulted or made fun of behind my back (see Appendix A)." The mean is 84 for white males and 49 for white females. The variable is highly skewed. Sixteen percent said they were never harassed. Forty-five percent said they were harassed but less than once a week. Eighteen percent said they were harassed at least 180 times in the school year and 7 percent said they received two different types of harassment at least daily.[16]

We hypothesize that social skills, athletic ability and academic ability—all three—assist students to gain popularity and avoid harassment. Verbal skills help one excel at the insult game that was an important part of social interaction among males at the predominantly middle class schools in our sample. High IQ makes homework easier to complete generating extra time for socializing. Hanging out with students in honors classes may also reduce the incidence of harassment. Conditional on academic ability, however, we hypothesize there will be a curvilinear relationship between pro-learning attitudes and visible indicators of academic engagement, on the one hand, and peer harassment on the other. Some of the students who substantially deviate from the school's effort and engagement norm on the down side will experience high levels of harassment—"Disruptor/Slacker harassment" it might be called. Students who have strong pro-learning attitudes and exhibit high levels of academic effort also face much higher risks of severe harassment. Nerd/Geek harassment is the traditional name for this phenomenon.

School Grades and Harassment

Our theory makes no prediction about the relationship between GPA and peer harassment. Why? It says nerd harassment has evolved to deter what classmates view as "anti-social" (and economists call negative externality creating) behaviors and attitudes most of which are **visible to classmates**—such as asking or answering lots of questions in class, studying during free periods, saying that science is fascinating and bragging about good grades. Harassment that responds quickly to these actions sends much clearer signals to other students

and is thus a more effective deterrent of 'anti-peer' behavior. Behavioral experiments have found that altruistic punishers are responding to perceptions of 'unfair' intentions not 'unfair' outcomes (Falk, Fehr and Fischbacher 2002). Grades are a poor signal of intentions. Getting good grades by "sucking up" and studying more than others is often perceived as unfair and sanctioned. But getting good grades because of a high IQ is not viewed as intentional and is seldom sanctioned. Indeed top grades achieved effortlessly signals high ability--something that peers and parents value a great deal. Consequently, high GPA students often avoid peer harassment by claiming not to study, eschewing public displays of interest in academic learning and keeping their grades secret. Many high achieving students gain popularity by pursuing this strategy.

There are also political reasons why norms denigrating (and recommending the harassment of) <u>everyone</u> with good grades will be rare. Such a norm would be strenuously opposed by the school's smartest kids, many of whom participate actively in sports, are socially very skilled and are members of leading crowds. The political power of these very smart kids within the leading crowds that publicize and enforce peer norms generally insures that norms are defined in a way that focuses sanctioning on students who are not core members of leading crowds—the nerds, dorks, geeks, burnouts, slackers and disruptors. Nevertheless, previous studies testing the hypothesis of oppositional peer cultures ('acting white' or nerd harassment) have used school grades to identify who is likely to suffer a social penalty for trying too hard in school. These studies typically find a positive relationship between school grades and popularity and have interpreted this finding as evidence against the oppositional culture hypothesis, at least, for white students. Cook and Ludwig (1997) found that white sophomores in NELS-88 getting 'mostly A's in math' were less likely to be threatened by classmates. Members of the honor society were also less likely to be threatened and more likely to describe themselves as popular. In Ainsworth-Darnell and Downey's (1998) study, those who reported "other students see him/her as a…very good…student" were much more likely to report that

they were popular. Using an improved measure of popularity—the number of classmates selecting one as a friend weighted by the friend's popularity--Fryer and Torelli (2005) also find a positive relationship between grades and popularity for white students in Add Health data.

Cross-tabulations of our data yield similar findings. Figure 1A and 1B depict how peer harassment of white students varies by the student's ability, GPA and gender.[17] In this and subsequent figures dashed lines describe relationships for students from the bottom thirty percent of the ability distribution. Solid lines represent relationships for students of average and above average self-reported ability. Girls experience less harassment than boys. As predicted, students in the top seven deciles of ability get harassed less often than those in the bottom three deciles. For female students (regardless of ability), GPA has a steeply negative relationship with harassment when grades are below B and a flat relationship for grades above B. This characterization of the relationship is also true for boys of average and above average ability. However, for less able males, the graph of harassment on GPA has a very pronounced U shape. For these students, harassment appears to be minimized when GPA is between a C minus and a B minus. Eighty-four percent have GPAs of C or above, so the vast majority of male students in the bottom three ability deciles appear to face a social penalty if they raise their grades by extra study. This suggests social penalties for academic engagement are significantly greater for less able boys, the very group that needs to study particularly hard to keep up. In the female sub-culture students with low grades (or more likely behaviors and attitudes associated with low grades) experience more harassment. Apparently, disruptor/slacker harassment is prevalent in both the male and female sub-cultures of the surveyed schools. Sanctioning of good grades seems to be prevalent only among males in lower track classes.

To explore these issues further we graphed the relationship between GPA and ability, on the one hand, and answers to questions where students reported whether peer pressure was intended to increase studying or decrease it:

❑   "My friends want me to study harder than I do" [1 to 4 scale running from strongly disagree to strongly agree.]

❑   "My friends DO NOT want me to study harder than they do." [1 to 4 scale running from strongly disagree to strongly agree.]

Figure 2 graphs the proportions of the students who agreed (or strongly agree) that 'Friends want me to study harder than I do'. Pressure to study harder was reported by 20 percent of white males and 17 percent of white females. These pressures were unrelated to ability but focused instead on students with low GPAs. Forty to fifty percent of students with GPAs below C- reported their friends wanted them to study harder. Only 10 percent of A students reported such pressure.

Figure 3 presents proportions of students who agreed that 'Friends DO NOT want me to study harder than they do'. Peer pressure against studying harder than friends was reported by 19.5 percent of white males and 13.5 percent of white females. One-quarter of the boys from the bottom three ability deciles reported such pressure. When graphed by GPA, pressure against studying harder had a U shape for the least able students. For boys in the bottom third of the ability distribution, pressure against studying was reported by 29 percent of those with failing grades, 20 percent of those with C averages, 24 percent of those with B averages, 31 percent of those with an A- average and 39 percent of those with an A average. These results suggest that classmates tend to encourage those who are doing poorly to try harder. But in the bottom track classes, our results suggest that high achievers are also discouraged from studying "too much."

We do not view a positive correlation between grades and popularity as decisive evidence against the proposition that norms discouraging studying are common in American secondary schools. High grades are not the way to identify students likely to be the object of harassment for holding and advocating pro-engagement and pro-learning views. Our theory predicts sanctioning will be focused on a small number of individuals who have clearly and

significantly violated norms. It will be advertised widely and copycat vigilantes will ensure that harassment is very frequent even in the face of counter measures designed to reduce vulnerability. Consequently, a better way to test the 'oppositional culture' hypothesis is to identify students who hold strong pro-learning attitudes or whose public actions signal a strong desire to excel academically and determine whether they are more likely to suffer the high levels of harassment that clearly indicate victim status.   This is what we do in the next seven figures.

Most people do not realize how the surrounding culture influences their actions. Responses to direct questions about which behaviors are proscribed by peer norms or about why an individual or a group is popular or unpopular are also going to be distorted by "social desirability biases" (Farkas et al 2002). A careful study of who gets severely harassed/sanctioned by peers and who does not gives us insight into the shape and character of norms regarding academic engagement prevailing at the secondary schools sampled. With a sample of more than 37,000 students we have sufficient power to estimate the fine structure of the relationships between social background, academic ability, pro-learning attitudes, academic effort and peer harassment separately for males and females. In our view this approach yields more convincing evidence about norms than directly asking students how their behavior has been influenced by others.

Attitudes: We constructed four normalized attitude scales—*I Like Learning, Teachers make Subject Interesting, Close Friends have Pro-Learning Attitudes* and *Close Friends are Annoyed by Class Disruptions"*—for this analysis. *I Like Learning* is a composite of three questions: 'I find the history and science textbooks interesting," "I like the books and plays we read in English" and "I enjoy doing math problems" (Alpha Reliability = .468). The *Teachers make Subject Interesting* index was an average of responses to "What % of time does your teacher make the subject interesting?" for Math, English, Social Studies, Science and Vocational/Tech subjects.[18]

The next two measures describe the attitudes of the student's closest friends. ***Friends are Annoyed by Class Disruptions*** is a composite of "My friends think... It's annoying when other students talk or joke around in class" and "My friends think... It's annoying when other students try to get the teacher off track" (Alpha reliability = .742). The ***Friends are Pro-Learning*** index (Alpha reliability = .778) is a composite of six normalized questions:

- "My friends think it's important for me to do well in science at school" {strongly agree, agree, disagree, strongly disagree}

- "My friends think it's important for me to be placed in a high achieving class" {strongly agree, agree, disagree, strongly disagree}

- "How important do your friends think it is to: {response set was: "Very important," Somewhat important," Not too important," and "Not at all important."}
  a. "Study hard to get good grades?"
  b. "Participate actively in class?"
  c. "Continue their education beyond high school?"
  d. "Go to one of the best colleges in the US?"

Figure 4 describes the relationship between the *I Like Learning* index, ability and peer harassment. For both genders peer harassment is higher for the least able students. For most of the range of the *I Like Learning* Index—from 2 SDs below the mean to 1.5 SDs above the mean—the relationship is pretty flat. However, the 4.5 percent of students who answered 'strongly disagree' for all three questions experienced ten to 20 extra incidents of harassment per year. The nine percent of students at the top of the *I Like Learning* scale experienced an extra 30 to 60 incidents of harassment per year.

Figure 4A describes the relationship between a student's belief that their *Teachers are Interesting* and peer harassment. In the middle of the scale there is no relationship between opinions about teachers and peer harassment. At the extremes it's a different story. The four percent of students who declare almost all of their teachers are boring are harassed significantly more than other students. A similar fate awaits those who say all of their teachers are interesting, particularly when they are in the bottom three deciles of self-reported ability.

Figure 5 describes the relationship between the *Friends are Pro-Learning* index and peer harassment. In the middle of the scale—between –1.5 SD and +1.5 SD-- the relationship appears pretty flat. However, the 3.1 percent of students whose friends were very low on the pro-learning index—below –2 SDs—experienced twice as much harassment as those in the middle. For girls harassment rises only modestly as the pro-learning index starts to exceed +1.5 SDs above the mean. For boys harassment shoots up once the 1.5 SD threshold is exceeded.

Figure 6 describes the relationship between the Friends are *Annoyed by Class Disruptions* index and peer harassment. Right in the middle of the scale—between –1 SD and +1 SD-- the relationship is pretty flat. However, the 10 percent of the sample whose friends strongly disagreed in both questions that disruptions were annoying experienced 50 percent more harassment than those in the middle on the scale. The 5 percent who strongly agreed that disruptions were annoying on both questions experienced twice as much harassment as those in the middle.

Studying and Class Participation   Figure 7 displays the association between 'contributing to class discussions' and peer harassment. Once again the relationship is concave. The most alienated students—the 2.6 percent who say they 'never participate'—face 50 percent higher rates of harassment than those who 'seldom' contribute to class discussion. At the other end of the continuum, the 16 percent who 'Always" participate in class discussions also face 50 percent higher rates of harassment than those who only participate 'fairly often.'

Figure 8 displays the relationship between time spent doing homework and harassment, For males harassment is minimized at 1 hour of homework a night. The small group of males (3.3 percent) who report doing more than four hours of homework a night are harassed at 50 to 100 percent higher rates. Low ability girls also face a sharp increase in harassment if they do a lot of homework.

The disengagement index is a composite of three normalized questions: *"How often do you really pay attention in class?", "How often does your mind wander?"* and *"How often do you joke around in class?"* Figure 9 displays the relationship between disengagement and peer harassment. Over most of the range of the disengagement index peer harassment grows as disengagement grows. However, among less able students there is also a pronounced tendency for the students with extremely high levels of engagement to experience substantially higher rates of peer harassment.

These patterns are what one would expect to be generated by student cultures where:

1. Peer Norms and sanctioning behavior have different objectives at the two ends of the distribution of academic engagement. They seek to persuade the most engaged students to stop sucking up to teachers and be less enthusiastic about learning. They also seek to punish students who disrupt the learning of others. These are the norms that are intended to 'deter actions that create negative externalities for peers.'

2. Peer harassment is also one of the mechanisms by which leading crowds try to enhance their prestige by claiming: "OUR Talents and Activities are cool, so Honor us, **not them**." Since the core members of leading crowds are at neither extreme of the engagement distribution, "Honor us, not them" norms also tend to generate concave relationships between engagement and harassment.

3. Peer pressures focus on visible indicators of effort and engagement (and public expressions of attitudes) that can be deterred rather than on exogenous traits like IQ or hard to measure characteristics like GPA. Sanctioning is conducted in front of other students (often friends of the victim) in order to maximize deterrence.

4. Norms and the propensity to sanction those who violate them vary across academic tracks, across crowds and from classroom to classroom. Students in lower track classes

who exhibit pro-learning attitudes and behaviors experience the severest nerd harassment.

5. The threat of harassment deters most but not all of the visible behaviors and public expressions of pro-engagement attitudes that many peers consider anti-social. As a result, only a tiny minority of students — those who both publicly violate norms and who lack protective social networks (e.g. respected for participation in sports) or an ability to retaliate physically --are being sanctioned in the equilibrium we observe.

6. The tendency of sanctioning (peer harassment) to concentrate on a small number of students at each extreme of the distribution of engagement is further exaggerated by the decentralized copycat behavior of the altruistic punishers/vigilantes.

Multivariate Models Predicting Peer Harassment of White Students

The six indicators of pro-learning attitudes and behavior just analyzed are correlated. How do relationships change when all six indicators compete to predict harassment? Do relationships retain their U shaped character? We represented the effect of each indicator by a linear and a quadratic term and estimated multivariate models. The U shape documented in figure 4 through 9 means the quadratic terms should have positive coefficients. The square terms for Ability, GPA, hours studying and class participation are defined as deviations from an integer value close to the mean. The attitude and disengagement scales are normalized (mean=0 and SD=1). Consequently, the coefficients on the linear terms characterize the slope of relationships for students near the middle of the distribution of pro-learning attitudes and behavior. The final attitude variable is an indicator of beliefs that "it's harder to get good grades when others study hard." Students who believe academic learning is a zero sum game are expected to suffer higher rates of harassment. Separate analyses are conducted for white males and white females. (Comparisons by ethnicity are addressed in other papers).

Table 1 presents logistic regressions predicting the odds of being harassed at least once a day. Column 1M and 1W present a very simple model containing self reported ability, GPA, books in the home, parent's education, grade in school and a dummy for middle school estimated in the full sample of white students who completed the EEA survey after January 2000 (32,525 students after observations are excluded because of missing data). Harassment declines as students progress through school (not shown). The least able students and those with low GPAs experience the most harassment. Students who have many books in their home are harassed a good deal more than other students. The daughters (but not sons) of well educated parents are harassed less.

When indicators of pro-learning attitudes and behaviors are added to the model (see column 2M and 2W) the estimated impacts of SES indicators change very little. Pro-learning attitudes and behavior have powerful effects on peer harassment. Classroom disengagement (joking around and not paying attention) and a belief that 'it's harder to get A's when others work hard" both have large positive linear effects on peer harassment. Thus, disruptive students are getting sanctioned, as hypothesized. But so are students who are annoyed by disruptions, those who hang out with friends who have strong pro-learning attitudes, those participating actively in class, those who enjoy their reading assignments and those who spend a great deal of time on homework. The quadratic terms for the three indicators of pro-learning attitudes, time spent on homework and classroom participation are all significantly positive. These concave relationships mean that the risk of being harassed on a daily basis is minimized by making sure one is not seen as a part of a clique with either strong pro-learning or strong anti-learning attitudes.

Table 1
Predicting the Likelihood of Being Harassed At Least Every Day
(Logistic model)

	White Male			White Female		
Ability and GPA	1M	2M	3M	1W	2W	3W
Ability Index (SD=1.77)	-.043 (.013)	-.026 (.014)	-.033 (.015)	-.078 (.018)	-.063 (.019)	-.063 (.019)
(Ability Index – 1) squared	.030 (.004)	.013 (.005)	.009 (.005)	.041 (.005)	.031 (.006)	.031 (.006)
GPA (Mean=3.15, SD = .75)	-.095 (.035)	-.067 (.036)	-.082 (.038)	-.260 (.042)	-.217 (.044)	-.169 (.046)
(GPA-3) squared	.039 (.025)	.000 (.026)	-.009 (.026)	-.007 (.032)	-.023 (.033)	-.014 (.034)
Attitudes toward Learning						
If others study hard, it's harder to get A's		.107 (.028)	.082 (.029)		.149 (.036)	.148 (.036)
"I Like Learning" Index (Mean=0, Std.Dev.. = 1)		.103 (.023)	.114 (.025)		.016 (.030)	.025 (.031)
Square of "I Like Learning"		.062 (.015)	.058 (.016)		.057 (.020)	.054 (.021)
Pro-Learning Attitudes of Friends (Mean=0, Std.Dev.=1)		.003 (.027)	.008 (.028)		-.085 (.031)	-.075 (.031)
Square of Pro-Learning Attitudes of friends		.060 (.014)	.056 (.014)		.079 (.019)	.076 (.019)
Friends Annoyed by Class Disruptions (Mean=0,Std.Dev=1)		.125 (.023)	.120 (.023)		.089 (.027)	.084 (.027)
Sq. of Friends are Annoyed by Classroom Disruptions.		.134 (.016)	.120 (.016)		.106 (.019)	.101 (.019)
Study Effort and Engagement						
Studying (hrs/day) range=0 to 8, mean=1.65, Std. Dev.=1.31		.026 (.022)	.033 (.023)		-.026 (.026)	.000 (.026)
SQ of (Study hr – 1.87)		.021 (.007)	.016 (.007)		.027 (.008)	.024 (.008)
Participate in Class (range=1 to 6, mean=4.15, Std. Dev.= 1.35)		.075 (.016)	.084 (.017)		.133 (.019)	.123 (.020)
Sq (Class Participation – 4)		.035 (.011)	.028 (.011)		.036 (.013)	.031 (.013)
Disengagement in Class (mean=0, Std. Dev.=1)		.282 (.029)	.239 (.030)		.246 (.033)	.207 (.034)
Sq of Disengagement		.014 (.016)	.020 (.016)		-.049 (.023)	-.047 (.023)
Books in the Home (range 0 to 5, mean=3.96, Std. Dev.=1.12)	.111 (.021)	.115 (.021)	.118 (.022)	.103 (.025)	.106 (.025)	.104 (.026)
Parent's mean Schooling (range 1 to 7, Std. Dev.=1.46)	-.005 (.016)	-.010 (.016)	-.017 (.032)	-.138 (.018)	-.137 (.018)	-.087 (.034)
Additional Control Variables	Grade & Mid. Sch.	Grade & Mid. Sch	24 additional	Grade & Mid. Sch	Grade & Mid. Sch	24 additional
Cox-Snell R Square	.015	.043	.057	.026	.041	.047
Negelkerke R square	.024	.069	.092	.050	.077	.088

The social costs of taking a strong pro-engagement stand are particularly great for boys. Holding everything else constant, boys who are 1.5 standard deviations above the mean on the three attitude scales have twice the probability of being harassed daily as students who are at the mean on these scales. Boys who are 1.5 SDs below the mean have the same risk of being harassed as those at the grand mean on attitudes. Compared to those with mean attitudes, girls who are 1.5 SDs above the mean have a 57 percent increased risk of being harassed at least daily. Girls who are 1.5 SDs below the mean have a 42 percent greater risk of daily harassment. If boys face stronger sanctions for nerdy attitudes and behavior than girls, we should not be surprised that they are less likely to have friends who felt it was important to learn or to become annoyed by classroom disruptions and less engaged in class and more likely to dislike school and drop out. In EEA data girls were .33 SDs higher on the "Friends are Pro-learning" index, .23 SDs higher on the 'Friends are Annoyed by Disruptions' index, .35 SDs lower on the Disengagement index and spent more than a half hour extra on homework.

Do these concave relationships survive the addition of a large set of control variables? Peer harassment does not depend solely on how classmates react to (sanctioning versus honoring) pro-learning attitudes, classroom engagement and grades. Other qualities such as hanging out and participation in sports generate protective social networks that are important determinants of popularity and harassment. The frequency of harassment may also depend on whom one hangs out with and how much time is spent with them. Kids are labeled by their crowd assignment and some of these labels generate harassment (e.g. the Freaks in Longview High School). In some cliques, teasing and insults are discouraged. In others cliques customs of teasing, physical aggression and disruptive behavior may victimize some members and/or provoke others to retaliate in kind.

Crowds may differ in their normative orientation. For example, students who place a high priority on college are less likely to harass classmates for studying too much. In EEA data the "friends" (cliques) who think that continuing education past high school is "Not too important" or "Not important at all" were twice as likely to "make fun of people who try to do really well in school." The cliques that placed a low priority on college, however, accounted for only about 10 percent of the students in EEA schools. This suggests that roughly four-fifths of the harassment enforcing "Don't try too hard" norms was coming from student cliques that placed a high priority on college for themselves. Cliques that were clearly made up of "go to a top college" strivers were also sometimes described as "making fun of students who try to do really well in school." [19]

The multivariate models in column 3M and 3W, therefore include variables (some of which may be endogenous) designed to measure other influences on rates of peer harassment

such as time devoted to extracurricular activities and hanging out, socio-economic background, teacher behavior and indicators of a student's crowd such as participation in band, theatre, honors classes and special education programs that our theory hypothesizes influences the likelihood of peer harassment.

Some bullies seem to just be looking for someone to dominate and humiliate. Their victims tend to be physically weaker, more anxious, more passive, more introverted and socially unskilled and often friendless. Their lack of self-confidence and self-esteem signals to bullies that abuse will not provoke effective retaliation (Olweus 1993). Many of these correlates of victimization, however, are just another proxy for unpopularity or are as much an effect of being bullied as its cause. Consequently, variables like self-esteem and the number of reciprocated friendships were not included in the models presented.[20]

The new controls for student background are parent's education, books in the home index, number of siblings, dummy variables for parents speak a foreign language at home, having a personal computer at home, living in a single-parent family, living in a blended family [having a step-parent], living with no parent [with relative or a friend] and descriptions of how teachers manage their classrooms. The means and standard deviations of all variables are presented in Appendix D. Coefficients on the control variables can be found in Table 3 and will be discussed in the next section. The effects of adding these controls on the estimated impacts of pro-learning attitudes and behavior can be assessed by comparing column 3M to 2M (and 3W to 2W) in Table 1. R Squares increase but the coefficients on the pro-learning attitude and behavior scales change very little. As before, the key relationships are U shaped.

A second way to check the robustness of the concavity finding is to re-estimate using a redefined dependent variable: the annual number of incidents of peer harassment of any kind. Are the relationships between pro-learning attitudes and behaviors and the total number of incidents of harassment U shaped as before? The OLS regressions predicting the number of incidents are presented in Table 2. The quadratic terms are large, positive and even more statistically significant than were their logistic counterparts. The relationships are graphed in Figures 10 through 15. We conclude once again that the relationship between pro-learning attitudes and behaviors and unpopularity/ peer harassment is U shaped. Secondary school peer cultures sanction those who fail to conform to a "Try, but not too hard" norm for academic effort.

These results are remarkably consistent with the theory and our interviews. Remember Robyn's description of Nerds as "**being very involved with school, asking a million questions in class, and not having much fun in their spare time.**" The statistical analysis found that the two visible indicators of academic engagement that increased the risk of nerd

harassment the most were **talking a lot in class** and **spending a lot of time on homework**. High IQ students who can and do get all their homework done in less than an hour a day were seldom marked for nerd harassment. Certain forms of cooperation with teachers--paying attention in class, not joking around—do not stimulate nerd harassment, until it becomes so extreme peers see it as "sucking up." The predictor of "Slacker/disruptor harassment" was high levels of 'disengagement"---seldom "paying attention in class" and frequently "joking around." Thus visible indicators of effort had substantial effects on both types of harassment.

Which kind of deviations from the "Try, but not too hard" norm—positive deviations or negative deviations-- provoke the most harassment? The linear terms of the pro-learning attitude scales, the class participation scale and hours spent doing homework give us the answer. Positive coefficients on these variables imply that nerds suffer the most harassment. Negative coefficients imply that slackers/disruptors suffer the most harassment. For males of average and above average ability, four of the five linear terms are significantly positive implying that peer harassment is more severe at the pro-learning end of the spectrum. Graphs of these relationships are presented in figures 10 through 15. The spline variables allow the slope of the attitude scales for the less able students to become steeper above the critical value of +1 standard deviation. All three of the spline variables are positive and two are significantly positive. This suggests that boys in the bottom three deciles of ability get a large extra dose of harassment when they hang out with friends who have a strong pro-learning culture. Girls of below average ability also get a large extra dose of peer harassment when they are high on the '*I like learning*' index.

Table 2
Predicting the Frequency of Physical and Verbal Harassment by Peers

	White Male			White Female		
Ability and GPA	4M	5M	6M	4W	5W	6W
Ability Index (SD=1.77)	-1.93 (.77)	-.75 (.80)	-2.09 (.84)	-3.27 (.57)	-3.12 (.60)	-3.22 (.62)
(Ability Index – 1) squared	1.59 (.27)	1.10 (.27)	.68 (.27)	2.17 (.20)	2.00 (.20)	1.96 (.20)
GPA (Mean=3.15, SD = .75)	-.66 (1.87)	-1.62 (1.91)	-6.71 (2.00)	-8.04 (1.29)	-7.14 (1.34)	-7.41 (1.44)
(GPA-3) squared	1.95 (1.45)	.23 (1.45)	-1.81 (1.44)	3.80 (1.14)	3.64 (1.15)	2.51 (1.15)
Attitudes toward Learning						
If others study hard, it's harder to get A's	12.6 (1.60)	10.5 (1.60)	9.75 (1.59)	8.22 (1.18)	7.93 (1.18)	8.48 (1.18)
"I Like Learning" Index (Mean=0, Std.Dev.. = 1)	4.92 (1.29)	6.02 (1.34)	6.73 (1.40)	.33 (.93)	.34 (.97)	.94 (1.02)
Square of "I Like Learning"	5.41 (.90)	3.84 (.92)	3.17 (.90)	2.19 (.68)	1.56 (.70)	1.35 (.69)
Bottom Ability Quartile * Spline for Like Learning GT 1		32.7 (18.3)	25.1 (18.0)		39.4 (13.0)	33.2 (12.0)
Pro-Learning Attitudes of Friends (Mean=0, Std.Dev.=1)	2.45 (1.48)	.25 (1.57)	.91 (1.56)	-3.45 (.97)	-3.98 (1.03)	-3.59 (1.03)
Square of Pro-Learning Attitudes of friends	7.68 (.82)	5.70 (.85)	5.52 (.84)	4.43 (.69)	3.89 (.71)	3.48 (.71)
Bottom Ability Quartile * Spline for Friends Pro-Learning GT 1		79.3 (21.3)	66.5 (20.9)		7.2 (13.0)	4.00 (12.9)
Friends Annoyed by Class Disruptions (Mean=0,Std.Dev=1)	5.53 (1.29)	7.85 (1.40)	7.45 (1.39)	1.96 (.86)	3.84 (.94)	3.40 (.93)
Sq. of Friends are Annoyed by Classroom Disruptions.	11.37 (.95)	8.75 (1.02)	7.18 (1.00)	5.50 (.64)	5.00 (.70)	4.31 (.70)
Bottom Ability Quartile * Spline for Disruptions Annoying GT 1		27.8 (11.5)	24.5 (11.4)		2.30 (6.20)	2.30 (6.14)
Study Effort and Engagement						
Studying (hrs/day)		4.37 (1.18)	3.75 (1.21)		-1.68 (.79)	-0.09 (.82)
SQ of (Study hr – 1.87)		1.23 (0.41)	1.33 (0.42)		0.88 (0.25)	0.85 (0.25)
Participate in Class		5.49 (0.90)	5.34 (0.92)		5.42 (0.61)	4.83 (0.63)
Sq (Class Participation – 4)		1.97 (0.61)	1.43 (0.60)		1.48 (0.42)	1.22 (0.42)
Disengagement in Class		12.39 (1.53)	11.84 (1.56)		7.57 (1.01)	7.70 (1.05)
Sq of Disengagement		4.36 (0.93)	3.69 (0.92)		-.65 (.76)	-1.24 (.76)
Additional Variables	none	none	24 var.	none	none	24 var.
Adjusted R Square	.037	.054	.087	.046	.055	.075

Table 1 and 2 –Continued	Physical + Verbal Harassment / yr		Log Odds Harassed at Least Daily	
	White Male 6M	Wh. Female 6W	White Male 3M	Wh. Female 3W
Time Use--Hours per Day doing:				
TV, video games & music listening alone or with family (hrs/ day)	**6.46** (.62)	**3.64** (.48)	**.101** (.011)	**.088** (.014)
Working for Pay	.78 (.61)	.12 (.43)	.007 (.012)	.013 (.013)
Extra-Curricular Activities	- 1.05 (.70)	-.07 (.51)	-.011 (.013)	.000 (.016)
Hanging Out and Talking with classmates by phone or computer	**- 3.09** (.70)	.30 (.48)	**-.059** (.013) (.013)	.014 (.014) ()
Signals of being Different				
In Gifted Program [mean=.156]	**11.34** (3.24)	2.16 (2.17)	**.183** (.059)	.030 (.074)
Tutored Other Students [mean=2.0]	3.38 (3.10)	**4.20** (1.77)	.046 (.058)	**.129** (.058)
Took Theater Course [mean=.18]	**13.55** (3.25)	**4.57** (1.80)	**.254** (.058)	**.161** (.059)
Took Band/Orchestra Course [mean=.386]	**4.54** (2.37)	2.57 (1.5)	.038 (.045)	.076 (.050)
# of Accelerated Courses in middle school [mean=1.07 SD=1.32]	**2.58** (1.00)	**1.33** (0.68)	**.045** (.019)	.026 (.023)
# of Honors or AP classes this semester	.17 (1.16)	-1.23 (.76)	-.011 (.022)	**-.046** (.027)
Took one or more Honors/AP courses	1.27 (3.61)	1.01 (2.40)	.034 (.068)	.003 (.080)
Was Mentored [mean=.142]	**10.75** (3.26)	**7.31** (2.28)	**.122** (.060)	**.158** (.070)
In Special Education [mean=.05]	**11.71** (4.94)	- .83 (4.16)	**.150** (.087)	-.038 (.122)
Number of Books in the Home (0→5) [mean=3.96, SD=1.12]	**6.61** (1.14)	**4.32** (.82)	**.118** (.022)	**.104** (.026)
Parent's Mean Schooling (1→ 7)	-.06 (1.70)	**- 2.44** (1.07)	-.017 (.032)	**-.087** (.034)
Personal Computer at home (mean=.952)	**-17.56** (5.48)	**- 12.95** (3.69)	**-.321** (.096)	**-.215** (.102)
Teacher Characteristics				
Share of time Teachers Interesting [0→100] mean=50, SD=21	**-.185** (.065)	-.062 (.045)	-.0022 (.0014)	-.0017 (.0015)
I don't feel close to any of my teachers this year [1→4} SD=.84	**4.38** (1.50)	-1.07 (1.05)	**.072** (.028)	-.045 (.033)
Teacher Disorganized, Does not Collect Homework Index SD=1.0	**8.27** (1.13)	**4.49** (.78)	**.117** (.020)	**.095** (.024)
Mean Dependent Var.	84.0	49.3	.192	.125
Std. Error of Estimate	138	94	---	---
R Square	.087	.075	Negelk =.092	Negelk =.088
# of Observations	15,727	16,791	15,727	16,791

Females of average and above average ability, however, are a different story. Only two of the five linear terms are significantly positive and a few are significantly negative. Furthermore, the linear term on classroom disengagement (which is scaled in the opposite direction) is significantly positive. This means that for these girls harassment is greater at the disruptor/slacker end of the engagement spectrum than the "pro-learning" end.

When attitudes, engagement and effort are held constant, grade point average becomes a good indicator of IQ. That is probably the reason GPA and the ability index have negative relationships with harassment in the multivariate model (see Figure 16). The negative relationship is particularly strong for females. Apparently, "It's fine to be smart," "It's OK to get good grades," but "It is not OK to try very hard to get good grades."

Why these Norms? In section 2 we hypothesized that school wide norms enforced by peer harassment have two purposes: (1) **Deter Actions Creating Negative Externalities for Peers** and/or (2) to **enhance the prestige of the group(s) that signal the norms and sanction those who violate them**. We hypothesize that the central role of popular crowds in establishing and enforcing peer norms results in school wide norms honoring activities and traits that are characteristic of these crowds. The struggle by the school's crowd for prestige and popularity yields a winner in the '**OUR Talents and Activities are cool, so Honor us, not them**' competition that sets the norms for the school. Does the empirical analysis provide us any tests of relative importance of these two explanations?

Both of these stories predict concave academic engagement norms as depicted in figures 1 through 15, so the concavity findings do not yield a differentiating test. The 'Deter actions creating negative externalities' theory implies that anti-engagement norms and nerd harassment are more likely to develop among students when they perceive academic classrooms to be zero sum games that pick winners and losers but cannot make everyone better off. "Honor us, not them" makes no such prediction. As predicted by the "deter negative externalities theory" the belief that school is a rat race is a strong correlate to peer harassment.

Males (females) who strongly agree that "if others study hard, it is harder for me to get good grades," experience 34 percent (51 percent) more harassment than those who strongly disagree. The school is a rat race belief is also the single most powerful predictor of our most direct measure of peer pressure against studying--student reports that "My friends DO NOT want me to study harder than they do (not shown)." Consequently, the strong positive effect of such perceptions on one's likelihood of being harassed supports the 'deter negative externalities' story. The large linear effect of disengagement in the multivariate regressions also supports the externalities story.

Discrete Indicators of Being Different and of Academic Orientation in Table 3: On the other hand, students who are generating positive externalities by tutoring, playing in the band, or putting on plays are not harassed less; they are harassed more (see Figure 17). Band courses were associated with significantly greater harassment for boys. The fourteen percent of boys who had taken a theatre course had a 16 percent higher rate of harassment. The twenty-three percent of girls who had taken a theatre course had 10 percent higher risk of harassment. Tutoring other students was also associated with a 4 to 10 percent higher rate of harassment. These results all contradict the 'deter negative externalities' explanation for harassment.

The "Honor us, Not them" theory predicts that students in groups that are not part of the popular/leading crowds will experience more harassment. Consistent with that hypothesis, the 5.9 percent of males who were in special education were about 14 percent more likely to be harassed than other students. Boys and girls being mentored by an adult were also experiencing about 14 percent more harassment. At the other end of the ability distribution, the fifteen percent of boys who were in gifted programs were harassed about 12 percent more than other students. Boys who took accelerated courses in middle school also experienced significantly more harassment but the effect was small if the number of accelerated courses was small. Current participation in honors and AP courses had no statistically significant effects on harassment.

Family Background: The fourth most important predictor of peer harassment was the number of books in the home, a traditional measure of family cultural capital. Holding attitudes, engagement, ability, time use and other measures of family background constant, boys from families with over 250 books in the home experience 56 percent more harassment than boys from homes with fewer than 10 books. Girls from homes with over 250 books experience 64 percent more harassment than girls from families with hardly any books. The five percent without a personal computer at the home were experiencing 25 percent higher rates of harassment. Parent's education had a negative relationship with harassment for girls but not for boys. Students from single parent families and those living with relatives or friends were significantly more likely to be harassed. These results are consistent with the "Honor us, not them" story not the "deter negative externalities" explanation.

Time use: Students who spend a good deal of time "watching TV, playing video games and listening to music alone or with family" get harassed a lot more than the students who stay after school to socialize and participate in extracurricular activities. Time spent "hanging out and talking on the phone with friends" significantly reduces harassment of boys but has no effect on the harassment of girls. These patterns are all the more remarkable when one considers that students who spend more hours socializing or in extra-curricular activities have a longer exposure to peers who might harass them. Harassment is positively correlated with time spent at home alone and negatively correlated with time spent with peers for two reasons. Spending more time with peers enhances popularity and lowers hourly risks of harassment. Unpopular students try to avoid harassment by heading for home as soon as school lets out.[21]

Student-Teacher Relationships: Students who said their teachers were 'disorganized', 'didn't care' and/or 'did not collect homework' experienced significantly more harassment as did males who said they didn't do homework because they could get a good grade without studying. A two standard deviation increase in this index is associated with a 20 percent increase in harassment. In addition, the thirty-six percent of males who said they "don't feel close to any

of their teachers this year" were 5 to 10 percent more likely to be harassed. Boys (but not girls) who report their teachers make the subject interesting are somewhat less likely to report severe levels of peer harassment.[22] These modest relationships might reflect causal effects of teacher behavior on school climate or a tendency for students with negative attitudes toward teachers to hang out with classmates who do a lot of insulting and teasing. Dropping these variables from the model does not significantly change the estimated effects of indicators of academic engagement and student background.

III. Formal Models of Why and How Peer Norms Arise.

In this section we formalize a model of why and how student sub-cultures create peer norms regarding academic engagement and cooperation in the classroom. A norm is a "should' or "should not' statement, backed up by sanctions, that applies to a specific social group. Each group within a school develops or coalesces around a set of norms that guide the cooperative production of the group's unique package of services (e. g. victories on the playing field, friendship, socializing, emotional support, etc.). Each group naturally believes 'Our talents and activities are cool' and wants other students to honor achievement in their characteristic activities. Some cliques/crowds are very successful at persuading classmates to honor them and their extra-curricular achievements. Others are moderately successful. Still others are denigrated for espousing deviant norms and participating in activities discouraged by school wide norms.

III-1—Which Group(s) gain Normative Hegemony?

The package of beliefs and norms that dominate a secondary school's peer culture are historical outcomes of decades long evolutionary processes in which countless candidate norms and beliefs have competed for attention and allegiance. Cultural evolution is typically modeled as an outcome of **differential replication and spread of ideas, beliefs, skills and norms** (memes using Dawkins phrase) **through social learning** (Boyd and Richerson 1985, 2005; Gintis 2000; Gintis et al 2005; Henrich and Gil-White 2001; Macy and Skvoretz 1998; McElreath

and Boyd, 2007, Richerson and Boyd 2005).   The spread of a meme depends on its longevity (how long it survives in its host), fecundity (rate of replication in other individuals and later generations) and copying fidelity.   *"Co-adapted meme-complexes* [e.g. cultures, institutions, sets of social norms] *evolve in the same kind of way that co-adapted gene-complexes evolve. Selection favors memes that exploit their cultural environment to their own advantage. This cultural environment consists of other memes which are also being selected. The meme pool comes to have the attributes of an evolutionary stable set, which new memes find it hard to invade.* (Dawkins, 1989, p. 199) " Fecundity and longevity of a meme are influenced by:

1) The usefulness, attractiveness and social utility of the meme (content biased transmission),

2) Whether it leads to successful interaction with peers and the environment (success-based biased transmission),

3) Whether the meme's hosts keep their adoption of the meme secret (zero transmission to other individuals)

4) Whether adopters proselytize and teach the meme to others (social learning costs biased transmission)

5) Whether it has been adopted by high or low prestige peers (prestige-based biased transmission),

6) Adoption rates that depend on the proportion of friends and associates who have already adopted the meme (frequency based biased transmission)

7) Whether the meme's hosts have above average rates of social interaction or are better known than other individuals (message frequency biased transmission).

8) Where meme adopters are located in structured populations [23] (e.g. Have meme adopters sorted themselves into cliques/clubs/tracks/teams with low or high rates of external interaction).

Most models assume that candidate memes create private benefits and are adopted one person at a time without coercion. Modeling the spread of a norm, however, requires a more complex model. Norms begin within a group and expand by adding individuals to the group or by persuading other groups to subscribe to the norm. Coercion is part of the system so a way of sanctioning violators must be developed. The additional factors that influence the spread and survival of norms include:

9) The coercive power of the vigilantes (altruistic punishers) who enforce a norm (e.g. Are most members of the social system willing to ostracize those who violate a norm? Hirshleifer and Rasmusen 1989). [24]

10) How costly is it to publicly sanction norm violators? Does public sanctioning of a few norm violators inexpensively deter others from violating the norm? (Xiao and Houser 2006) How easy is it to induce the vigilantes to sanction violators?

11) How are the vigilantes prevented from abusing their sanctioning power? What gives legitimacy to their sanctions? Might opponents of a norm respond to sanctions by escalating the instruments of coercion (e.g. complaining to the principal or an older brother, gang violence, dueling, blood feuds).

12) How easy is it for individuals who oppose a norm (or want an exception made) to hide their violation of the norm or to bribe the vigilante enforcers?

13) How costly is it for opponents of a norm to exit the social system where the norm applies and join a group without the norm?

14) Would threats by norm opponents to leave the social system, deter leaders from instituting the norm? Or alternatively, is the prospect that opponents of a norm will exit

the social system (e.g. clique/school/town/nation) considered a positive outcome by those advocating the norm.[25]

Only the first two factors in this list relate to the content, attractiveness or social utility of the norm. All other factors (3 through 14) are either bandwagon effects or hinge on the power, prestige, coercive capability and actions of the early adopters/advocates of a candidate norm and the ease of establishing an enforcement regime. This is particularly true for the spread of **norms.** This suggests that norms that are not appealing to the most powerful members of a social group are unlikely to be adopted. Their spread from one group to another will also depend as much on the power and prestige of the originating group as the attractiveness and social utility of the norm to the members of the second group. The factors 3 to 14 listed above identify personal qualities—attractiveness, physical strength, self confidence, extroversion, high rates of social interaction, high prestige etc-- that make individuals and groups more influential and thus more able to persuade others to adopt their norms. This leads us to predict that the pressures of differential norm replication and the competition between crowds for high status will result in all leading crowds placing a similar a high positive valuation on the personal qualities that make one an effective proselytizer for crowd norms. Thus the members of the leading crowds of most schools will tend to have the following characteristics:

a) Gregarious individuals who seek notoriety and have very high rates of social interaction

b) Authoritative, self confident, persuasive, attractive and socially skilled—They are respected or feared by other students.

c) True believers and proselytizers who seek to persuade others to accept the norms of their crowd.

d) At least a few enforcers who sanction norm violators.

e) Loyalty--Willing to subordinate personal preferences to group norms and present a united front to teachers and other students (in other words copying –fidelity is high). This goal is

facilitated by admitting new members only after they have proved their loyalty to the group's norms.

Our analysis of evolutionary mechanisms implies that the leading crowd status of the Jocks, Populars and Preps (all-rounders) and their control of peer norms is an evolutionarily stable equilibrium in most American high schools. The schools we have encountered that are not dominated by these crowds are quite atypical—small schools of choice that attract students by setting very high academic standards and have very talented teachers. The introversion, poor social skills and love of learning of the nerds and geeks make them ineffective advocates for their point of view.[26] Realizing that they cannot improve their peers' attitudes toward academic engagement, many pursue the incognito strategy of hiding their own commitment to academic learning and engagement. This, of course, leaves the students who continue to publicly advocate a "learning is fun" norm all the more exposed to harassment.

We leave to other papers the project of building evolutionary models examining how alternative ways of running a school might give students who enjoy being fully engaged in their classes an ability to persuade the rest of the students to support pro-engagement peer norms. In the rest of this section we analyze the current reality and assume that jocks, populars and preps dominate a school's leading crowds. We build an economic model analyzing how the norms these groups establish will respond to the grading practices of teachers, the selection policies of competitive colleges and how the labor market rewards achievement and class rank.

III-2 Economic Models of Academic Engagement and the Peer Norms that Guide Student Decisions

In this section we propose a model describing the effects of student engagement on learning (L) and how expectations of future intrinsic and extrinsic rewards for learning motivate engagement in class (E) and discourage class disruptions (D). When (a) learning is not

influenced by the norms and behavior of classmates and (b) learning is efficiently signaled to employers and colleges, person 'i' faces a simple lifetime utility maximization problem:

1) Choose E^i and D^i to maximize: $U^i\{L^i(E^i, D^i, S)\} -- \Theta^i(E^i, D^i, S)$

     where $\Theta^i(E^i, D^i, S)$ = Psychic Costs of Academic Engagement at School

Engagement may at first yield immediate psychological benefits, but, as work becomes more time consuming and demanding, marginal benefits decrease and become costs on the margin ($\Theta_E{}^i > 0$, $\Theta_{EE} > 0$). The first order condition for engagement has the student comparing the future earnings benefits of the increase in human capital resulting from increased engagement to the psychological costs of engagement (due in part to the resulting reduction in socializing and leisure). A student's level of engagement (E^i) is visible to teachers but not necessarily to classmates. Students who disrupt class by joking around and disrespecting the teacher are not just expressing their own feelings; they are also often seeking to recruit classmates to their way of thinking about school. Students who never disrupt class either get no pleasure from being disruptive or are deterred by teacher disapproval and school sanctions (eg. $U_{Li} L_{Di} -- \Theta^i_{Di} < 0$ evaluated at D=0).

2) $U_{Li} L_{Ei} -- \Theta^i_{Ei} = 0$

3) $U_{Li} L_{Di} -- \Theta^i_{Di} \leq 0$ if D=0.

     $U_{Li} L_{Di} -- \Theta^i_{Di} = 0$ if D >0.

Good teaching enhances learning both directly, $L_S i > 0$, and indirectly by discouraging disruptions and inducing students to become more engaged. When instructional quality (S) is high, the learning benefits of engagement go up ($L_{Ei S} > 0$) and learning lost due to disruptions goes down ($L_{Di S} < 0$), the psychic costs of engagement are smaller ($\Theta_{ES} < 0$) and the psychic costs of disrupting class are larger ($\Theta_{DS} > 0$).

The growing evidence of peer effects on learning (see footnote 7 and 8) implies that assumption (a)—"classmates do not matter"--is seldom valid. The economic theory of learning developed below drops this assumption and deals explicitly with the social character of school

learning and the influence that peer norms have on motivation to learn and to exhibit enthusiasm for learning.

The first key assumption is that learning production functions exhibit positive learning externalities. Peer effects are incorporated in Eq. #4 by adding the mean number of disruptions in the *i'th* student's classes (**D***=$\frac{1}{M}\sum_{j=1}^{j=M}D^{j}$) and a mean of classmates' engagement

(**E***= $\frac{1}{M}\sum_{j=1}^{j=M}E^{j}$) (where M is the number of students indexed by *'j'* in the six classes that student *'i'* takes a year). Students learn less when classmates joke around and disrupt the class ($L_{D^{*}} < 0$) (Figlio 2003). Engaged and cooperative classmates help others learn more ($L_{E^{*}}$ > 0).

4) L = L^{i}(E^{i}, E*, D^{i}, D*, S, A). where L_{E} >0, L_{EE}< 0, $L_{E^{*}}$ > 0, $L_{E^{*}E^{*}}$ < 0, $L_{EE^{*}}$ = 0, A = ability,

The second new assumption is that students influence each other's level of engagement. Visibly enthusiastic hard working students tend to stimulate at least some of their classmates to greater effort and engagement.[27] We capture this effect by including two new variables--whether the student is highly engaged and public about it, P^{i}, and the share of students *publicly exhibiting high levels of engagement* (P*= $\frac{1}{M}\sum_{j=2}^{j=M}P^{j}$) --- in equation 1a, the revised lifetime maximization problem:

1a) Choose E^{i}, D^{i} and P^{i} to max: U^{i}{L^{i}(E^{i}, D^{i}, P^{i}, E*, D*, S)} -- Θ^{i}{E^{i}, D^{i}, P^{i}, S, P*} When pro-engagement role models (**P***) become more prevalent, the psychic costs of engagement fall ($\Theta_{E^{i}P^{*}}$ < 0, $\Theta_{E^{*}P^{*}}$ < 0), so engagement rises ($E^{i}_{P^{*}}$ > 0, $E^{*}_{P^{*}}$ > 0) for many students.[28]

The third new assumption is that many visible signals of achievement (grades awarded on a curve, awards, admission to prestigious colleges, etc) that have lasting effects on income and prestige **are determined by contests with classmates or class rank, not**

absolute levels of achievement.[29]   School-generated signals of relative achievement influence college admissions and job quality and therefore lifetime utility. These Rank Rewards are given by: $R^i\{G[(E^i - E^*), (L^i - L^*), (D^i - D^*), (P^i - P^*)]\}$. Some students come to view school as a rat race where they compete with classmates for a fixed set of prizes. This generates incentives for students to establish peer norms against rate busting, 'sucking up' and expressing enthusiasm for academic work (Coleman 1960) and to sanction those who violate these norms.

The fourth new assumption is that students have a peer culture that respects students who support norms and sanctions (ostracizes and/or harasses) those who publicly violate norms. The Expected Utility Loss from Peer Harassment punishing norm violations is given by: $H^i(D^i, P^i, A^i)$ where $H_D > 0$, $H_P > 0$ and $H_A < 0$. E^i is not included in H^i function because it is not visible to classmates.

The new lifetime maximization problem is:

1b) Choose E^i, D^i and P^i to maximize:

$$U^i = \psi^i(L^i) + R^i[(E^i - E^*), (L^i - L^*), (D^i - D^*), (P^i - P^*)] - \Theta^i(E^i, D^i, P^i, S, D^*, P^*) - H^i(D^i, P^i, A^i)$$

Where the new learning function is given by 4b) $L^i = L^i(E^i, D^i, P^i, E^*, D^*, S, A^i)$ and

The first order conditions for the *i'th* student's three decision variables are :

5) $U^i_E = \psi_L L_E + [R_L L_E + R_E] - \Theta_E = 0$

6) $U^i_D = \psi_L L_D + [R_L L_D + R_D] - \Theta_D - H^i_D = 0$

7) $U^i_P = \psi_L L_P + [R_L L_P + R_P] - \Theta_P - H^i_P = 0$

The first term of the f.o.c.'s measure long term effects of the three indicators of classroom engagement on improvements in knowledge and skills as valued, ($\psi_L > 0$), by the student (intrinsic benefits) and the labor market (extrinsic benefits): [($\psi_L L_E > 0$, $\psi_L L_P > 0$ and $\psi_L L_D < 0$]. The bracketed terms measure the tendency of better engagement to improve teacher-generated signals of achievement (recommendations, grades, school awards, class rank, etc) that, in turn, help students gain admission to top colleges and land good jobs. The third term measures the

psychic costs of marginal increases in each indicator of engagement. The fourth term

measures the expected loss of utility due to increased harassment (or loss of peer respect) from

an increase in disruptions (H^i_D) or from public support for pro-engagement norms (H^i_P).

Harassment is one of the ways students sanction those perceived to violate peer norms. How

successful is it in internalizing the externalities present in the school's social environment?

How is the utility of student 'i' affected by the visible actions of the other (j=1....M)

students in her classes? To determine that, we substitute 4b and the definitions of E*, D*, P*

and L* into 1b and then take the total derivative of the *i'th* student's utility with respect to D^j, the

j'th student's disruptive behavior, and with respect to P^j, the *j'th* student's public support for

trying hard in class.

8) $\quad \dfrac{\partial U^i}{\partial D^j} = \left[\; \Psi^i_L L^i_{D*} - R_{D*} - \Theta^i_{D*} \right] \dfrac{\partial D*}{\partial D^j}$

Equation (8) describes the externalities created by student 'j's disruption. The first term

($\psi^i_L L^i_{D*}$) characterizes *i's* loss of lifetime utility due to reduced learning. The next term

characterizes the Rank Benefits 'i' receives because the disruptive student has made 'i' look

relatively better to teachers. Direct reactions to the disruptions by other students (Θ^i_{D*}) vary

from student to student. Those who dislike classroom activities and enjoy the extra within-class

socializing and leisure generated by someone else's disruption have a negative Θ^i_{Dj}. Those

who enjoy classroom activities and therefore dislike disruptions have a positive Θ^i_{Dj}.

9) $\quad \dfrac{\partial U^i}{\partial P^j} = \left[\; (\Psi^i_L L^i_{E*} - R_{L*} L^*_E - R_E)\dfrac{\partial E*}{\partial P*} - R_{P*} - \Theta^i_{P*} \right]\dfrac{\partial P*}{\partial P^j}$

Equation (9) describes the externalities created by student *j's* public support for pro-

engagement norms while holding *i's* level of engagement constant. The first term ($\psi^i_L L^i_{E*} E^*_{P*}$)

characterizes *i's* gain in lifetime utility from extra learning stimulated by *j's* successful effort to

increase classmates' engagement. The next three terms, {($-R_L \cdot L^*_E - R_E$) $E^*_{P*} - R_{P*}$},

characterize 'i's Rank Rewards losses due to the rate busting effects of student 'j' support for

hard work. Student *j's* classmates are working harder, so *'i'* must work harder just to maintain his GPA. The final term, (Θ^i_{P*}), the direct reactions to student 'j's public support of pro-engagement norms, are likely to vary a lot. [30] Students who are well known for their high commitment to learning will see the new recruit as a validation of their own view that academic engagement should be respected and honored by classmates. Hard working students pursuing the incognito strategy will probably be happy for the same reason, but will probably not make their support public. Many other students are likely to oppose 'j's effort to raise the prestige and social status of those who are public about their interest in and engagement with learning. Their status with peers comes from their talent for athletics, socializing and partying, so they are likely to oppose changes in the rules of the status game that would involve giving similarly high levels of respect to enthusiastic students who wear their love of learning on their sleeve.

Whose views about the direction and magnitude of externality effects will prevail as peer norms evolve towards an equilibrium? Disagreements are not settled by a secret ballot. Members of leading crowds and the vigilantes that enforce peer norms are overwhelmingly influential in most schools. Students who lack prestige, who are not interested in persuading those outside their clique to adopt their norms or who are intimidated from trying will have little influence. We represent each student's power to influence school norms and willingness to participate in their enforcement by W^i, where $\sum_{i=1}^{i=M} W^i = M$. We then calculate weighted sums of the externality effects of disruptive acts (equation 10) and for public support for greater academic effort and engagement (equation 11). We argue that the severity of the sanctions imposed on students who disrupt class, $D^j > 0$, or who publicly promote pro-engagement norms, $P^j > 0$, is inversely related to these weighted sums.

10) $\displaystyle\sum_{i=1}^{i=M} W^i \frac{\partial U^i}{\partial D^j} = \sum_{i=1}^{i=M} W^i \left[\Psi^i_L L^i_{D*} - R_{D*} - \Theta^i_{D*} \right] \frac{\partial D*}{\partial D^j}$

11) $\sum_{i=1}^{i=M} W^i \frac{\partial U^i}{\partial P^j} = \sum_{i=1}^{i=M} W^i \left[(\Psi^i{}_L L^i{}_{E*} - R_{L*} L^*{}_E - R_E) \frac{\partial E*}{\partial P*} - R_{P*} - \Theta^i{}_{P*} \right] \frac{\partial P*}{\partial P^j}$

Our interviews and the ethnographic work of others suggests that leading crowds persuade their classmates to accept a pattern of normative evaluations and sanctions, [$H^i(D^i, P^i, A)$], that place the leading crowds at the top of the school's prestige hierarchy.[31]   Our theory thus proposes that school wide norms will, at least to some extent, reflect the personal preferences of the leadership and core members of leading crowds, groups that are often not representative of the student body as a whole. Naturally, they will prefer norms that honor their gifts, their interests and their values. They spend more time on sports, extracurricular activities, hanging out and partying than peers, so one would expect them to promote norms valuing extracurricular and social achievements and down play niche activities—e.g. chess, math team, and theatre—that they do not participate in. The leading crowd's "We're cool, so Honor us, not them" preferences ($\Theta^i{}_{D*}$, $\Theta^i{}_{P*}$) are clearly going to be important determinants of peer attitudes towards classroom disruptions and toward enthusiastic hard-working students.   These attitudes may seem immutable, but a careful examination of (10) and (11) suggest a number of ways educators might change the leading crowd's perceptions of how learning and engagement externalities affect them. Some suggestions--developed more fully in section 5--are listed below.

1. Convince students (and members of leading crowds in particular) that the lifetime utility gains from greater learning ($\psi^i{}_L$) are much greater than previously believed. (eg. publicity about the high return to college, high quality secondary school exit exams, tougher grading standards, persuade selective colleges to give greater weight to a student's commitment to public service and developing academic and artistic talents and less weight to athletics and indicators participation in social clubs).

2. Convince influential students that their learning is severely damaged by classroom disruptions and disengagement ($L^i{}_{E*}$ and $L^i{}_{D*}$ are large) and that they should encourage slackers to try harder.

3. Stop grading on a curve and base grades on effort and achievement relative to an external standard. Refuse to report class rank. Do not base school awards or college admissions on how student's rank relative to classmates. This removes the rank rewards terms from (10) and (11).

4. Establish large academic and artistic teams (Band, chorus, debate, model UN, school newspaper, VICA, etc) that practice together and compete with other schools. Celebrate the performances and accomplishments of these teams in school ceremonies and local newspapers.

Since the attitudes of peer leaders are particularly influential, a school's academic climate will depend to some degree on how effectively teachers and administrators have been at inducing them to adopt a pro-learning pro-school agenda.

IV. Summary and Conclusions

This paper addresses one of secondary education's most serious problems—a peer culture that in most schools discourages many students from trying to be all that they can be academically. We examined the issue by reviewing school ethnographies, by interviewing students in eight suburban high schools and by analyzing data from questionnaires completed by 37,000 white students attending schools serving upper middle class communities. Grounded in these observations, we built a simple model of why peer norms arise, how they are taught to new students and how they are enforced. Many of the norms—no informing on classmates, no 'sucking up' to teachers, no rate busting, let others copy your homework, hangout and socialize—can be characterized as peer solidarity norms designed to deflect or moderate pressures for academic engagement and achievement coming from adults.

Peer solidarity norms attempt to deter actions that students perceive as creating negative externalities and to encourage actions (e.g. interscholastic sports, playing in the band, tutoring, sharing homework) that generate positive externalities. To some degree this happens— disruptive students are frequently harassed and athletes are honored. But other

groups of students who generate positive externalities—tutors, thespians, band members—face above average amounts of harassment. This differential treatment proves that the caste and status norms are important and sometimes trump the 'internalize externalities' motive for peer norms. The key role of leading crowds in setting and enforcing norms results in the school's caste/status norms honoring activities and traits that are characteristic of these crowds. The caste/status norms signal: "OUR Talents and Activities are cool, so Honor us, Not the nerds, Not the disruptors, Not the slackers."

Some of those who publicly break the norms are harassed sometimes by leaders of the popular crowds but more frequently by student 'vigilantes' who aspire to be admitted to one of the leading crowds. Bystanders typically side with the vigilante not the victim (Craig and Pepler 1997). Those who defend a victim or just maintain a friendship with an outcaste risk being sanctioned themselves. Singling out a few nerds and disruptor/slackers for public harassment and social exclusion sends powerful normative signals to the rest of the student body about the behaviors that will make you unpopular.

How do students explain the unpopularity of kids stigmatized as nerds? Most of our interviewees blamed the nerds for not socializing, for "saying stupid things," talking too much in class, wearing unstylish clothes and being competitive about grades. The victims of nerd harassment tended to be students of average or below average ability whose inclination was to study hard and learn. They tended to be smaller, less aggressive and socially and athletically less competent. As one 8th grade boy put it: "They are nerdy. If you got someone who will fight, and you have someone who won't do anything, whom would you pick on? (Espelage and Asiado, 2003 p.8)." Typically identified in the first weeks of middle school, they then experience teasing and public harassment intended *"to wear down your self-esteem* (Boynton Middle School interviewee 1998).*"* Once singled out, victims sometimes become targets of other 'vigilantes.'

> *"For some reason they just hear about me and say 'Hey let's bug the kid or let's chase him.' I don't know, that always seems to amaze me—like kids*

> *that I've never seen before know my name, know about half the things about me; some of them I don't know".* (Morton in Mertens, 1996, p. 12)

Under these circumstances, it should be no surprise that victims of daily harassment have lower self-esteem and try to minimize the time they spend with classmates. In our data, 13 percent of girls and 19 percent of boys report being harassed daily.

Economists and sociologists have made considerable progress in explaining the origin and stability of trust and cooperation in environments lacking formal enforcement mechanisms. Our study of secondary schools supports the consensus that has emerged about the power of reputations and altruistic punishment (vigilantism) to build and sustain trust and cooperation within a sub-culture. The fear of ostracism and humiliation is sufficient to change even deeply held values and behavior patterns, so the threat of such punishment is a highly effective way of enforcing peer norms. But our study also demonstrates, we think, that spontaneous altruistic punishment (vigilantism) sometimes generates extremes of ostracism and harassment that turn some victim's school days 'into a living hell [to use Judith Harris's phrase].' Injustices are inevitable.

Our data also reveal a second problem: the dysfunctional character of the norms that altruistic punishment is enforcing. In most schools peer norms have defeated most teachers' efforts to create pro-learning cultures in their classroom. In most classrooms it's not cool to enjoy the books assigned or to get aggravated at someone disrupting the class. This appears to have induced many with pro learning attitudes to hide their interest in the subject from classmates. Centola, Willer and Macy (2005) and Willer and Kuwabara (2006) have demonstrated that unequal power and altruistic punishment can result in unpopular norms becoming ascendant.

Adolescents naturally form themselves into cohesive groups that have unequal status and influence in the school's peer culture. Spontaneous norms enforced by social sanctions are more likely to arise in environments with large disparities in power (Oliver, Marwell and Teixira 1985, Macy 1990). Our analysis of secondary school peer cultures concludes that these power

inequalities have indeed led to norms that oppress stigmatized groups who can exit the social system only with great difficulty by transferring or dropping out of school.

Our final reason for being concerned about spontaneous norms enforced by altruistic punishment was powerfully expressed by John Stuart Mill in *On Liberty*.

> "Society can and does execute its own mandates, and if it issues wrong mandates instead of right, or any mandates at all in things with which it ought not to meddle, it practices a social tyranny more formidable than many kinds of political oppression, since, though not usually upheld by such extreme penalties, it leaves fewer means of escape, penetrating more deeply into the details of life, and enslaving the soul itself. Protection, therefore, against the tyranny of the magistrate is not enough. We need protection also against the tyranny of the prevailing opinion and feeling, against the tendency of society to impose, by other means than civil penalties, its own ideas and practices as rules of conduct on those who dissent from them."

Social systems with intense repeated interaction and barriers to exit and entry will spontaneously develop norms that have powerful effects on social behavior. There are millions of potential combinations of norms. What we need are explanations of how and why the particular norms we now live by were generated? Are they a historical contingency? Are they determined by a group's beliefs and purposes, the distribution of power, the external environment and/or the network structure of the group? How do the institutions for debating, choosing and enforcing norms—freedom of expression, democracy, religion, tribal authority, markets, schools, etc.—influence which norms are adopted, the social costs and benefits of the norms, the dynamism of the society and the freedom, dignity and happiness of the population? The research program implied by these questions spans economics, sociology and psychology. Our aspiration is more modest. In the next section we offer a few tentative ideas about how changes in the institutional structure of secondary schools can make school peer cultures less dysfunctional.

V.   **Policy Speculations: Outside the Box Thinking about What Happens Inside the Black Box**

What insights does the model of student norms about academic effort and engagement offer for school leaders?   Schools must vigorously assert that learning comes first and foremost and systematically work to make sure that student culture accepts that principle.

__KIPP Academies:__ The first best solution to the problem is for teachers to take over normative leadership of the school and make working hard the norm. This is what happens at KIPP Academy middle schools.

> The cool kids in our school are kids who work hard, because we as adults have made sure that to be "in" you have to work hard. We have an extensive system of rewards and consequences that every teacher in every grade administers the exact same way. The consistency from classroom to classroom and across grade levels is the key, and it has helped us to establish that culture of hard work. We are all working together and have been successful because, to be frank, we haven't allowed kids, who in the past may have gotten away with not doing any work or who may have put other kids down for being nerdy or too studious, the opportunities to become "cool" or "in." Our discipline is firm; if you don't work hard you don't get to sit with your friends at lunch, go on field trips, participate in gym class, attend special events, etc., and we, the adults, are all on the same page with this. It's hard to set the norms when you are not the one participating. On the flip side, if you do work hard, then you will be rewarded in fun ways—pizza parties, skating trips, things like that. So, to have fun and fit in, kids must adapt, they must work hard. You're probably saying to yourself that this doesn't sound like your traditional middle school and why would any kid want to put in such hard work. But the kids love it here, because they are discovering that great things happen to people who work hard. And they want to be included... (Dean of Students of KIPP DC: KEY Academy, 2002).

KIPP academies are non-selective choice schools that run from 8:00 AM to 5:00 PM during the normal 180 day school year, have compulsory Saturday enrichment programs two or three times a month and a three week summer school. During the summer prior to entering the

school for the first time, new students spend a couple of weeks in skills building exercises, learning the KIPP culture and bonding with their future classmates and teachers. The goal is to develop the skills and knowledge necessary to gain admission to and succeed in a demanding private high school. Students are not competing against each other for a limited number of opportunities to go to a private or charter high school. If they achieve at the required level, they will all make it into good high schools. KIPP academies are islands of discipline and of caring, demanding teachers in a sea of chaotic schools led by dispirited adults. In many cities parents are queuing to enroll their child in these schools.

Regular Public Schools: However, when students and parents do not choose the middle school, establishing a strong adult dominated, academically focused student culture is more difficult. How then can educators make serious engagement with learning normative for students? There are a number of avenues. Leading crowds (and other crowds as well) can be expected to promote norms that reflect their own interests (Niebuhr 1933). If the leading crowd is taking learning seriously, peer norms about the optimal level of academic effort will shift up and the whole school will be pulled to a higher level. Thus, all of the instruments for persuading individuals to take on academic challenges and study harder—hiring competent and demanding teachers, state or departmental end-of-course exams, minimum competency exam graduation requirements, higher college admissions standards, increases in payoffs to schooling and learning, etc.—will eventually have the same effects on peer norms that they have on the incentives faced by individuals. There may, however, be delays before norms change.

College Completion as a Common Goal: Almost all middle school students aspire to go to college--even those with very poor basic skills.[32] Middle schools should encourage this universal aspiration by taking their students on trips to local colleges, briefing parents on financial aid options and inviting former students to talk about the enjoyable aspects of college life and the importance of studying in secondary school so that they are well prepared. Everyone should be presumed to have college as their goal, including children from very

disadvantaged families. Many students do not realize that the academic foundation they are developing in high school is critical to success in college.[33] Once this mistaken belief is corrected, students will be more motivated to take demanding courses and study hard.[34]

Teachers should make a special effort to persuade the leaders of influential student crowds to set particularly demanding personal goals (e.g. attending the state's top public university or a competitive private college). If the leadership and core members of the leading crowd are trying to get into competitive colleges, they will need to take honors classes and work hard in them. This will tend to make studying and contributing in class normative and will encourage other students to raise their aspirations and commitment to academics.

__We Will All Succeed if We All Work Hard:__ We must recognize that an anti-learning peer culture is likely to develop if students perceive academic classrooms to be zero-sum games that pick winners and losers but cannot make everyone better off. The reality is quite the contrary. Learning generates positive real externalities not negative pecuniary externalities (as the focus on class rank suggests). Students and teachers, however, are not aware of recent research establishing the importance of learning multipliers. The importance of positive learning externalities needs to be communicated to students, teachers and parents. The academic enterprise **needs to be** and **to be perceived to be** a positive sum game in which success by one individual helps others succeed. Teachers should not grade on a curve. Grades should be based on student effort (e.g. completing homework assignments), good discipline (not disrupting the learning of others) and absolute achievement (results of quizzes and tests). The school should not publish or call attention to class rank. Having course content assessed externally by examinations set by the state department of education or Advanced Placement program is also desirable.

__Competitions between Schools in the Academic Arena:__ Band, choir, theater, cheerleading and athletic programs receive enthusiastic support from the community because these organizations represent the school to neighboring communities and student achievements

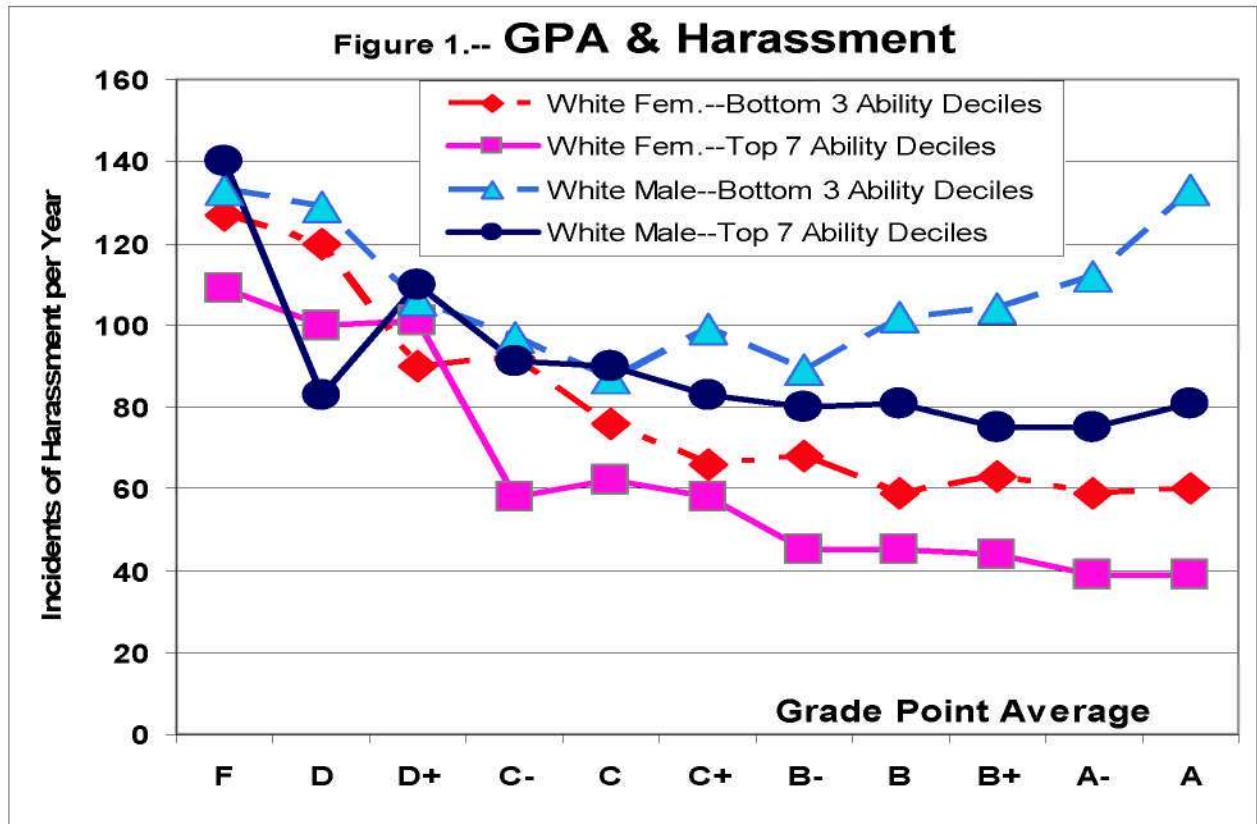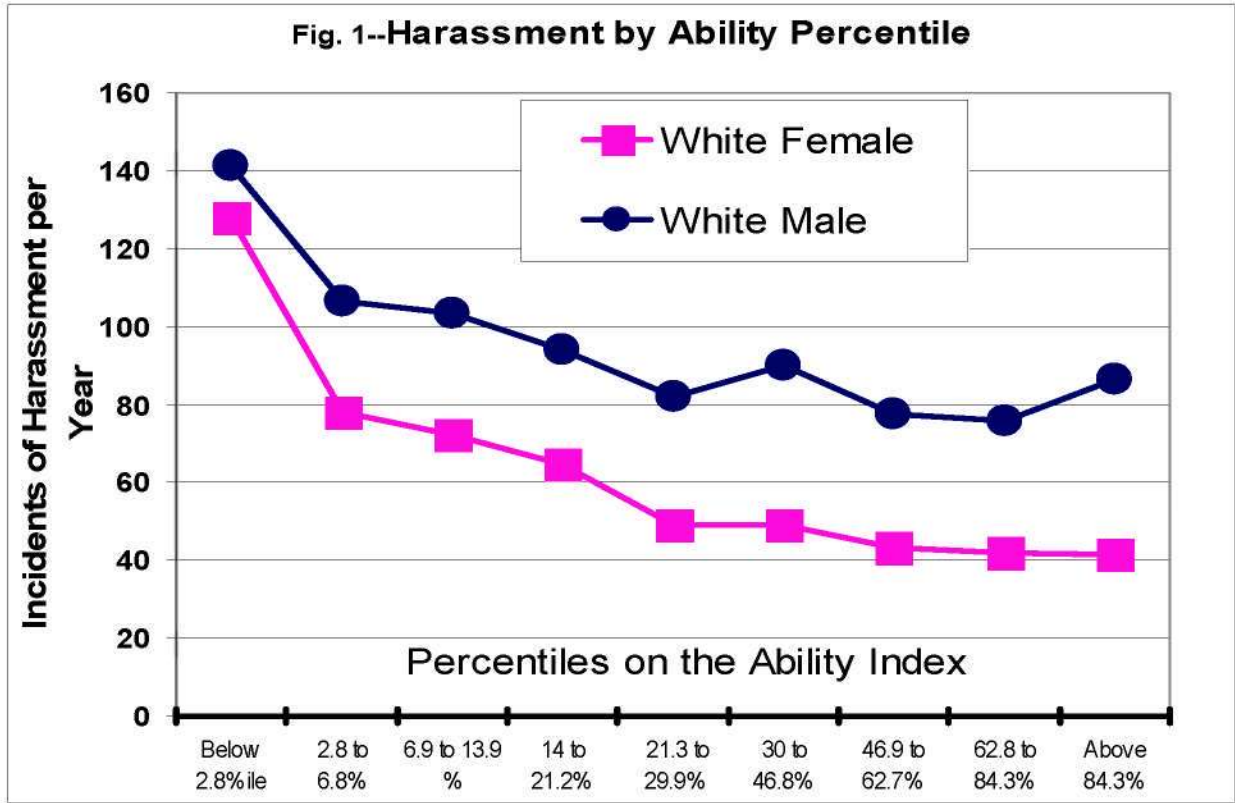in these arenas are visible to the community and rest of the student body. As James Coleman observed in 1961:

> "the athlete gains so much status...[because] he is doing something for the school... leading his team to victory, for it is a school victory.... The outstanding student, by contrast has few ways--if any--to bring glory to the school. His victories...are often at the expense of his classmates, who must work harder to keep up (p. 309).
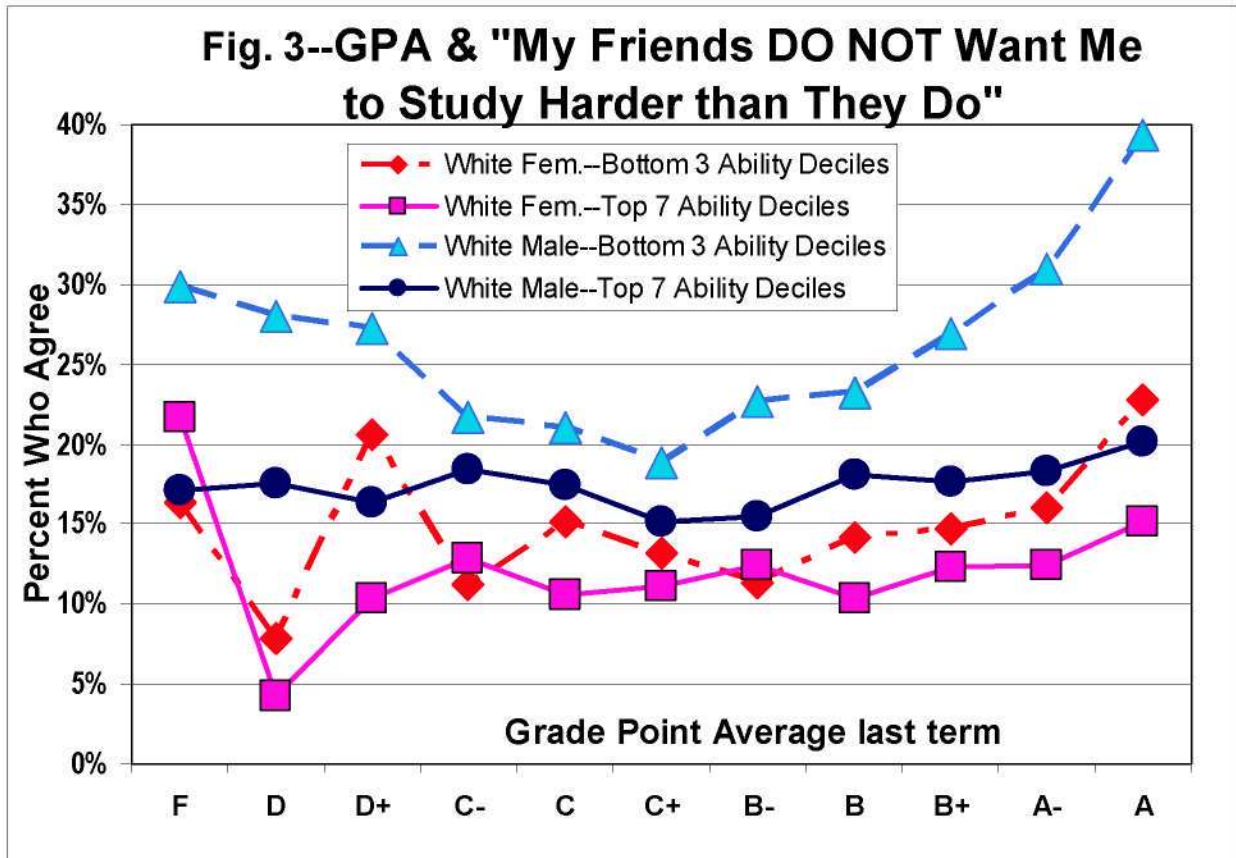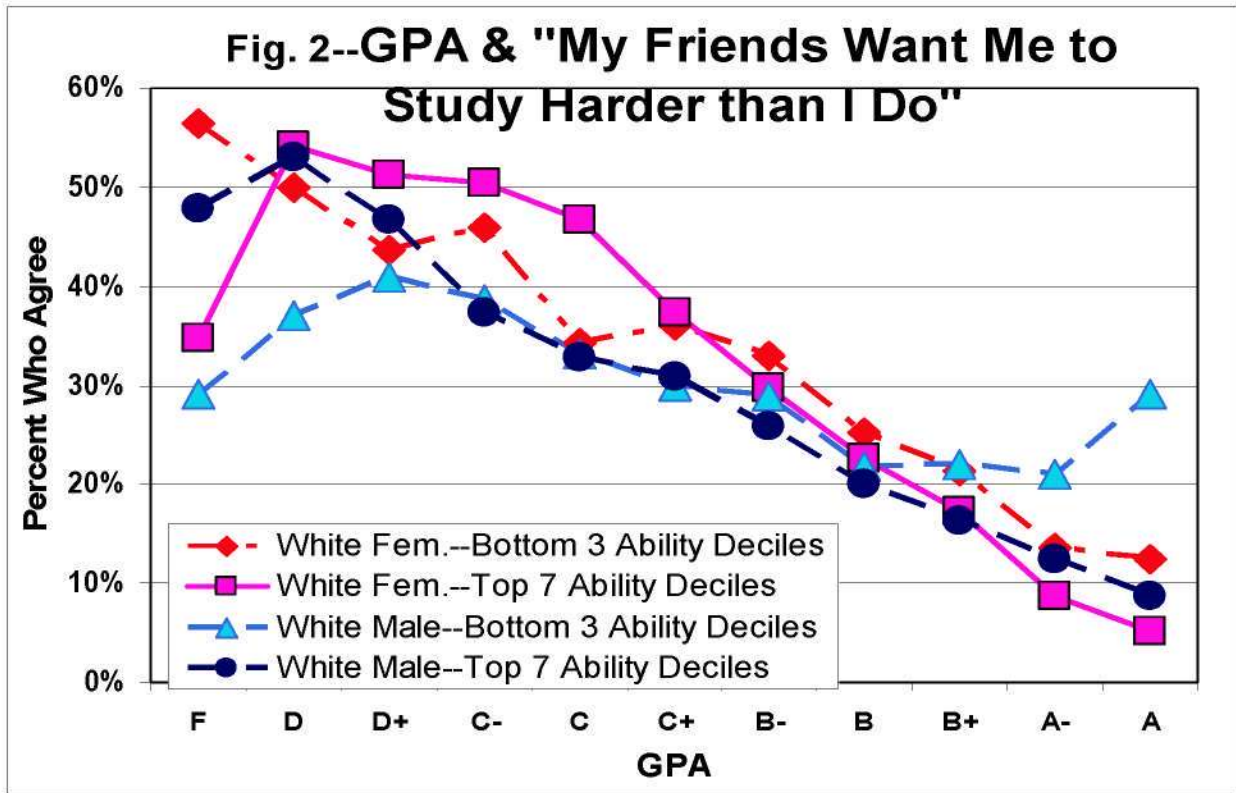
Academic extra-curricular activities need to harness the energy and school spirit that inter-school rivalry and public performances generate. Individual states and foundations should establish inter-scholastic team competitions in academic subjects and for activities like debate, constructing robots and the stock market game. As many students as possible should participate and all students who practice regularly should have a valued role. This can be accomplished by arranging separate competitions for each grade, increasing the minimum size of teams and allowing schools to field larger teams or more than one team.[35] Academic teams should be celebrated in pep rallies, awards ceremonies, homecoming parades, trophy displays and local newspapers along with the school's sports teams. There should be a sixth grade team that begins training in the first week of middle school. The purpose of starting early is to encourage the creation of large academically oriented friendship networks (where students like William and Les would find support), to give those groups a positive identity and accomplish this while the social order is still fluid.

No Pass-No Play: Eighty-five percent of high schools have a minimum GPA requirement for participation in interscholastic sports. A clean disciplinary record—e.g. no drugs, alcohol or fights, etc.--is also typically required. These policies have both practical and symbolic effects. Academic support is offered to athletes who are struggling. Some athletes are induced to study harder. Others either avoid parties where drugs and alcohol will be consumed or attend without imbibing. Since athletes are the nucleus of the popular crowds of most schools, their behavior influences the behavior of everyone else. A third effect of these policies is on the makeup of the

team. Students who are unable or unwilling to keep their average above the required minimum are either benched or cut from the team. The composition of the popular crowds changes and, as a result, the norms promoted by the leading crowds become more favorable to academic learning. Our final suggestion for school administrators, therefore, is to reinvigorate their no- pass-no-play policy and extend it to cheerleading and possibly to other high prestige extracurricular activities where students represent the school to surrounding communities.

The policy ideas just presented are a sample of the initiatives educators described to us when we asked them about their successful efforts to promote a pro-learning environment. Conclusive evidence regarding the efficacy of these ideas requires careful randomized field trials of these and other approaches to character education. There is a great deal to be learned.

Fig. 1--Harassment by Ability Percentile

Figure 1.-- GPA & Harassment

Fig. 2--GPA & "My Friends Want Me to Study Harder than I Do"

Percent Who Agree

- White Fem.--Bottom 3 Ability Deciles
- White Fem.--Top 7 Ability Deciles
- White Male--Bottom 3 Ability Deciles
- White Male--Top 7 Ability Deciles

GPA: F, D, D+, C-, C, C+, B-, B, B+, A-, A

Fig. 3--GPA & "My Friends DO NOT Want Me to Study Harder than They Do"

Percent Who Agree

- White Fem.--Bottom 3 Ability Deciles
- White Fem.--Top 7 Ability Deciles
- White Male--Bottom 3 Ability Deciles
- White Male--Top 7 Ability Deciles

Grade Point Average last term

F, D, D+, C-, C, C+, B-, B, B+, A-, A

Fig. 4--Effect of Liking to Learn on Harassment

Legend:
- White Fem.--Bottom 3 Ability Deciles
- White Fem.--Top 7 Ability Deciles
- White Male--Bottom 3 Ability Deciles
- White Male--Top 7 Ability Deciles

Y-axis: Incidents of Harassment per Year

X-axis: Like to Learn Index (in standard deviation units)

X-axis labels: 2+ SDs Below | 1.5 to 2 SDs Below | 1 to 1.5 SDs Below | .4 to 1 SD Below | Mean +/- .4SD | .4 to 1 SD Above | 1 to 1.5 SDs Above | 1.5 to 2 SDs Above | 2+ SDs Above

Fig. 4a--Harassment by Whether You Think Teachers are Interesting

Legend:
- White Fem.--Bottom 3 Ability Deciles
- White Fem.--Top 7 Ability Deciles
- White Male--Bottom 3 Ability Deciles
- White Male--Top 7 Ability Deciles

Y-axis: Incidents of Harassment per Year

X-axis: Percent of Time I Think my Teacher Makes Subject Interesting

X-axis labels: Under 10 % of time | 11 to 25 % of the time | 30% | 40% | Half the time | 60% | 70% | 76 to 89 % of the time | Over 90 % of the time

Fig. 5--Harassment by whether Close Friends are Pro-Learning

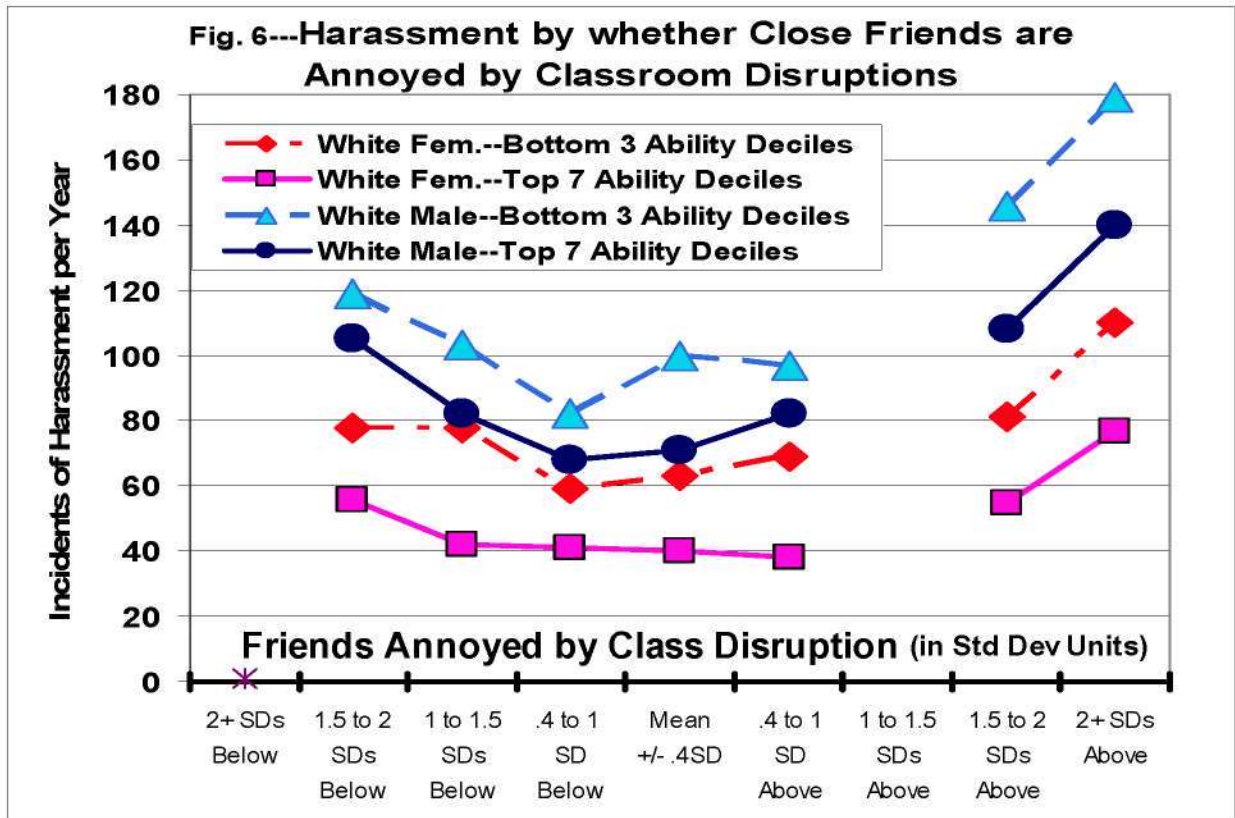**Fig. 6---Harassment by whether Close Friends are Annoyed by Classroom Disruptions**

Fig. 7--Peer Harassment by Frequency of Participation in Classroom Discussions

Legend:
- White Female--Bottom Ability Quartile
- White Female--Top 3 Ability Quartiles
- White Male--Bottom Ability Quartile
- White Male--Top 3 Ability Quartiles

Y-axis: Incidents per year

X-axis:
Never (2.4%), Seldom (12.5%), Fairly Often (16%), Often (21%), Usually (32%), Always (16%)

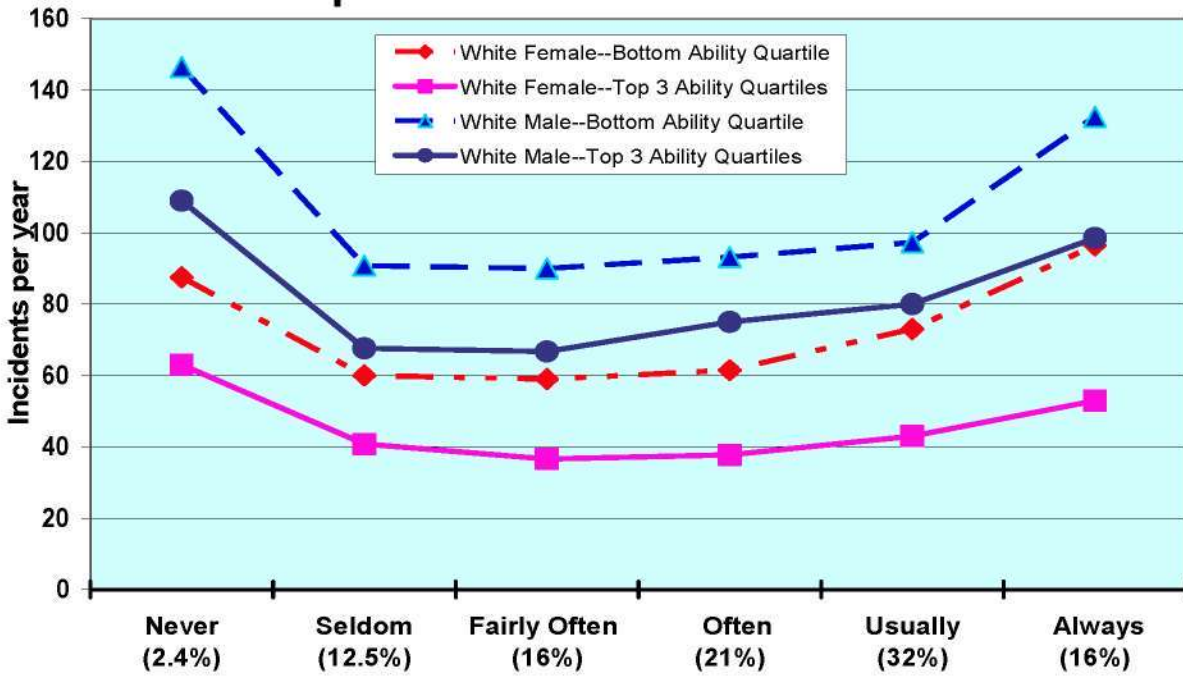## Fig. 8--Peer Harassment by Hours Doing Homework per Day

Legend:
- White Fem.--Bottom 3 Ability Deciles
- White Fem.--Top 7 Ability Deciles
- White Male--Bottom 3 Ability Deciles
- White Male--Top 7 Ability Deciles

Y-axis: Incidents per Year

X-axis:
None (19%), Half Hour (28%), 1 Hour (28%), 2 Hours (28%), 3-4 Hours (15.4%), 5-6 Hours (2.6%), 8+ Hours (0.7%)

Fig. 9--Peer Harassment by Disengagement

Incidents of Harassment per Year

- ◆ -- White Fem.--Bottom 3 Ability Deciles
- ■ White Fem.--Top 7 Ability Quartiles
- ▲ -- White Male--Bottom 3 Ability Deciles
- ● White Male--Top 7 Ability Deciles

Disengagement Index (in standard deviation units)

| 2+ SDs Below | 1 to 1.5 SDs Below | Mean +/-.4SD | 1 to 1.5 SDs Above | 2+ SDs Above |

### These Patterns are consistent with a Culture in which Peer Harassment:

- Is intended to **Deter Visible** Actions and **Public Expression** of Attitudes **(Sucking up, Rate Busting, Disrupting Classes)** perceived to threaten the interests of other students.
- Enforces the Hegemony of leading crowds: **"OUR Talents and Activities are cool, so Honor us, Not them."**
- Norms and the propensity to sanction classmates varies across crowds, classes and tracks.
- The threat of harassment deters most but not all visible violations of norms so **only a tiny minority are sanctioned** and some escape sanction because of protective social networks.
- **Decentralized copycat sanctioning** by vigilante enforcers accentuates the tendency of harassment to focus on just a few victims.
- **Verbal Ability is valued**

Fig. 10--Peer Harassment by "I Like to Learn" Index (with full controls)
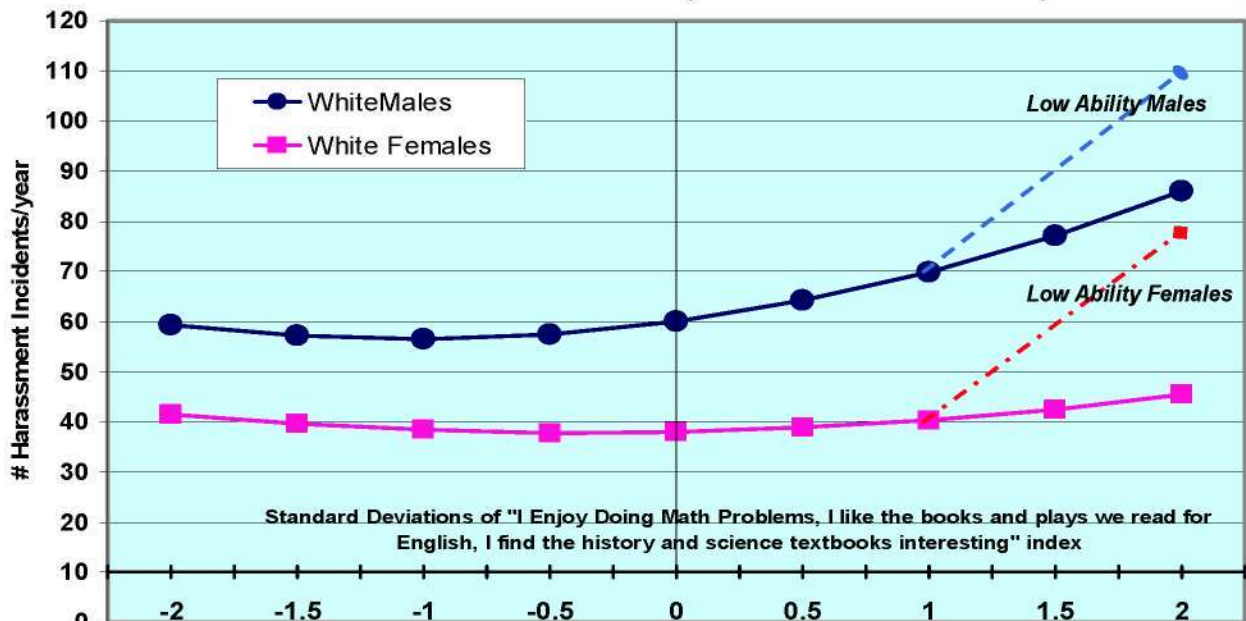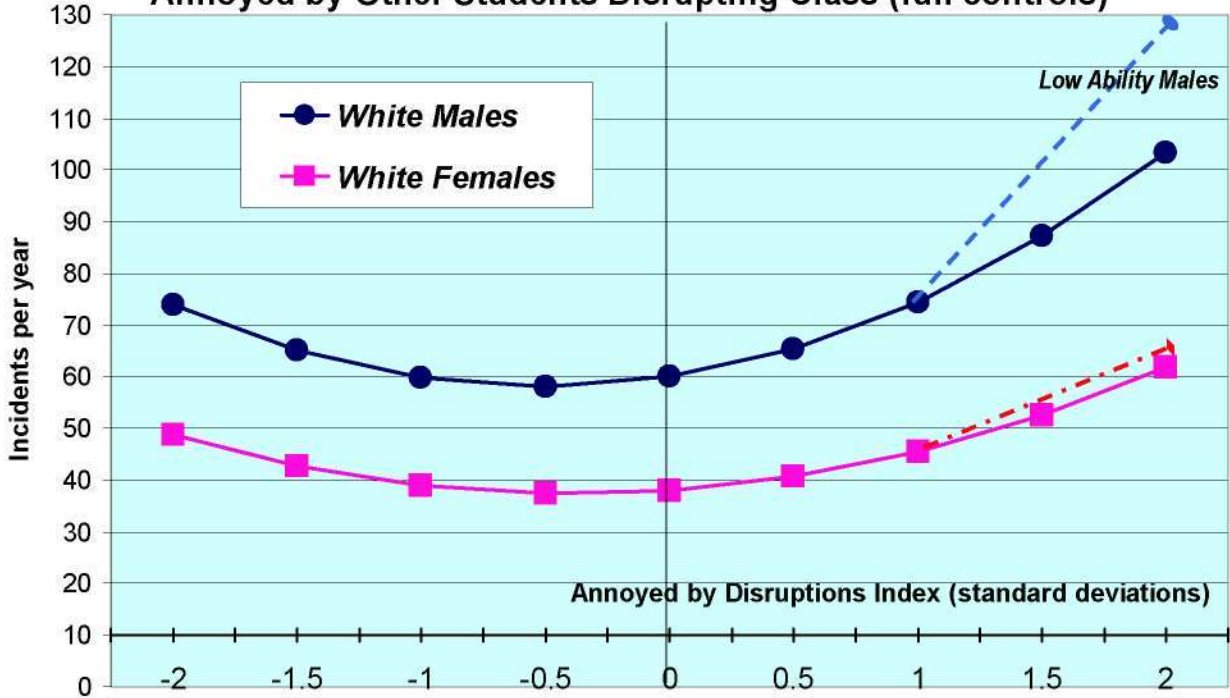

Simulations of the impact of the Like to Learn Index while controlling for Positive Peer Pressure, disengagement, Annoyed by disruption, class discussions, time doing homework, hanging out, in extracurricular activities, in solitary leisure, GPA and a host of other student characteristic and their perceptions of teachers.

## Fig. 11--Peer Harassment by Close Friends are Pro-Learning (with full controls)
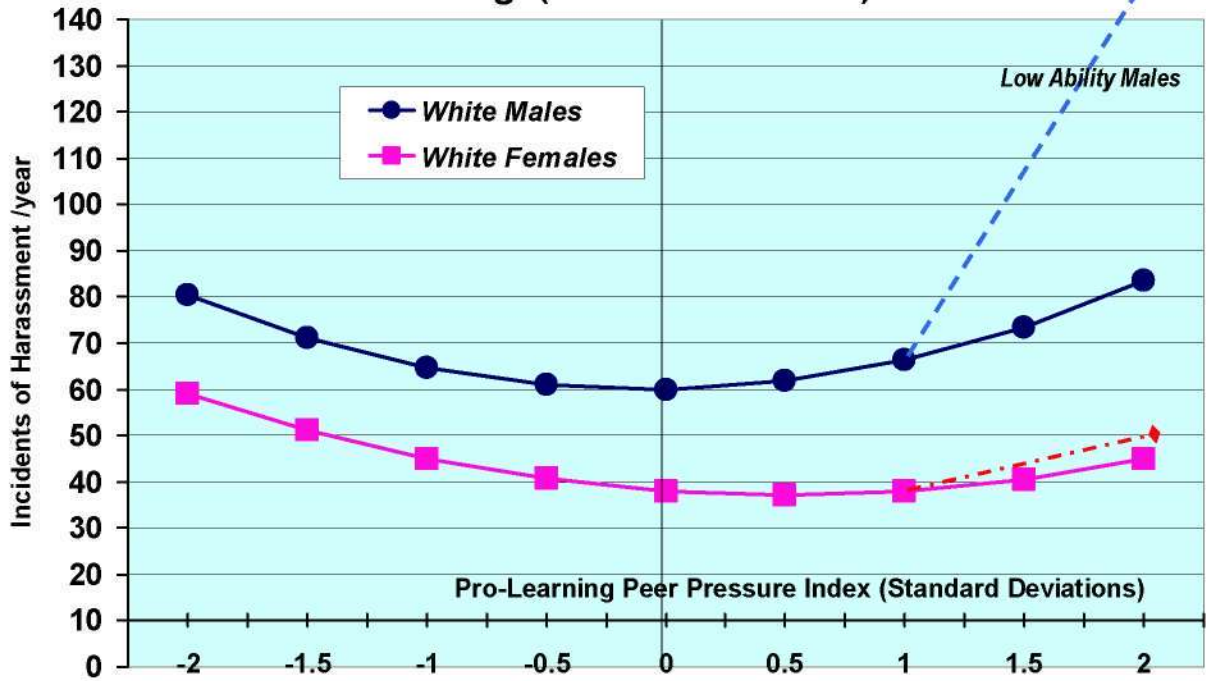
Simulations of the impact of the Positive Peer Pressure while controlling for like to learn, disengagement, Annoyed by disruption, class discussions, time doing homework, hanging out, in extracurricular activities, in solitary leisure, GPA and a host of other student characteristic and their perceptions of teachers.

Fig. 12--Peer Harassment by Whether Best Friends are Annoyed by Other Students Disrupting Class (full controls)
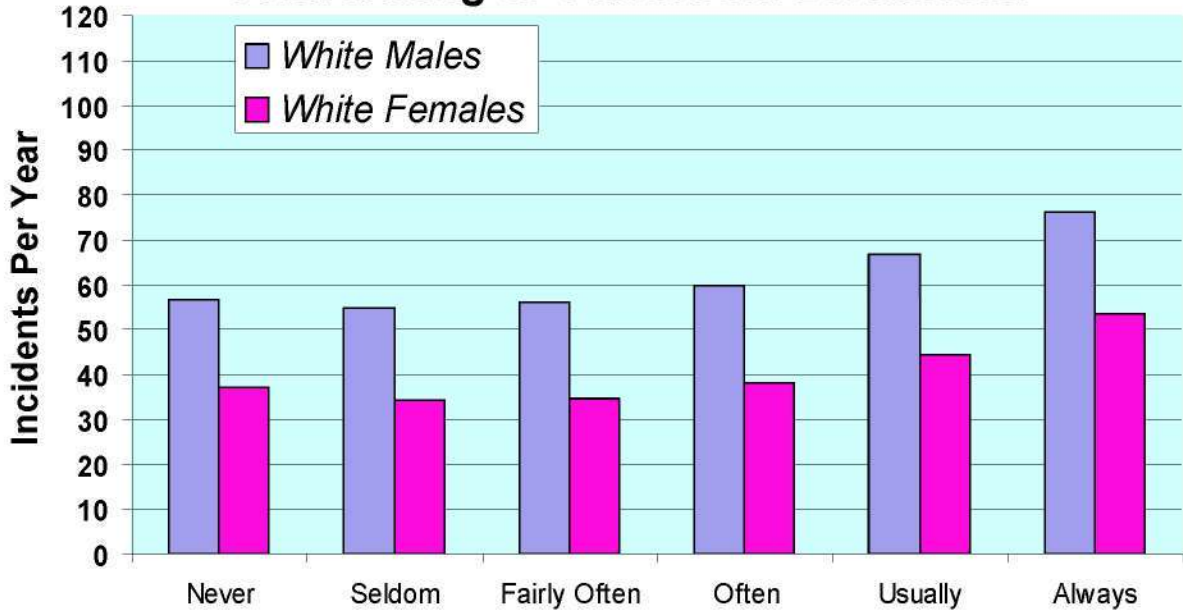
Simulations of the impact of Annoyed by Disruption Index while controlling for like to learn, disengagement, Positive Peer Pressure, class discussions, time doing homework, hanging out, in extracurricular activities, in solitary leisure, GPA and a host of other student characteristic and their perceptions of teachers.

Figure 13--Peer Harassment by Hours Spent Doing Homework per day
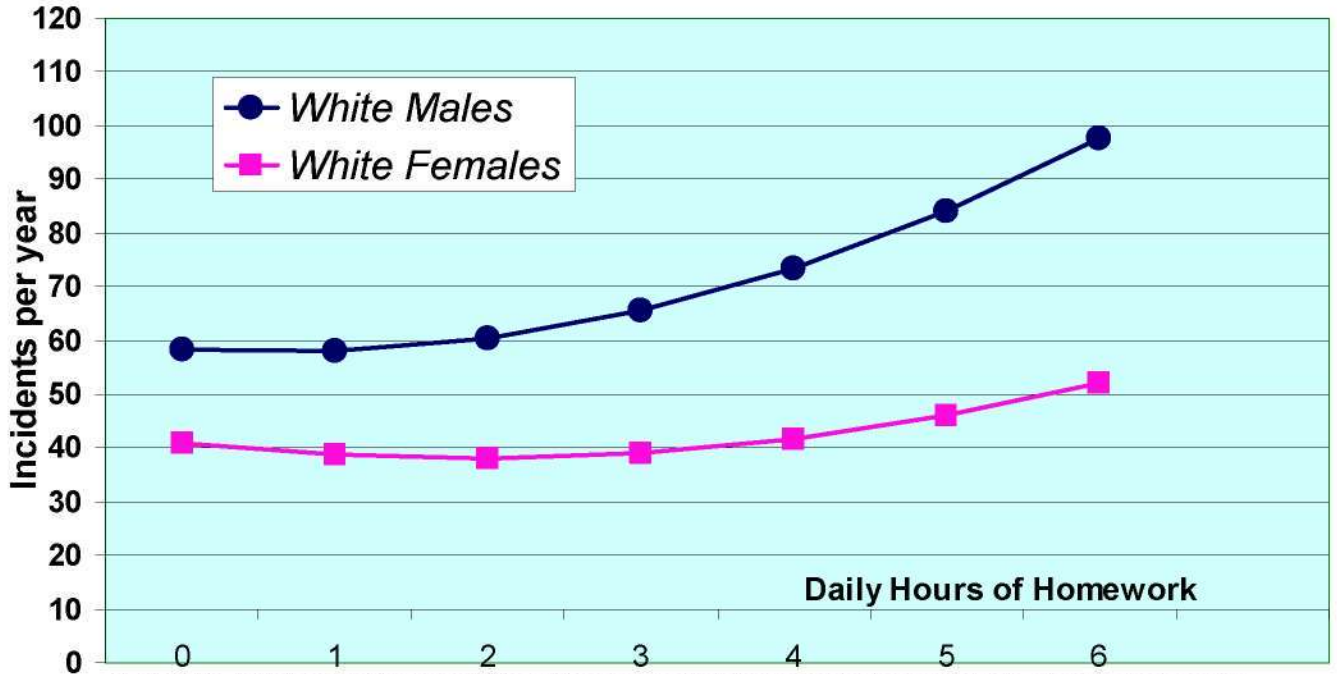
Simulations of the impact of homework time while controlling for disengagement, contributing to class discussions, like to learn, annoyed by disruptions, positive peer pressure, time spent hanging out, in extracurricular activities, in solitary leisure activities and a host of other student characteristic and their perceptions of teachers.

Fig. 14--Peer Harassment by Frequency of "Contributing to Classroom Discussion"

Simulations of the impact of contributing to class discussions while controlling for disengagement, homework time, like to learn, annoyed by disruptions, positive peer pressure, time spent hanging out, in extracurricular activities, in solitary leisure activities and a host of other student characteristic and their perceptions of teachers.
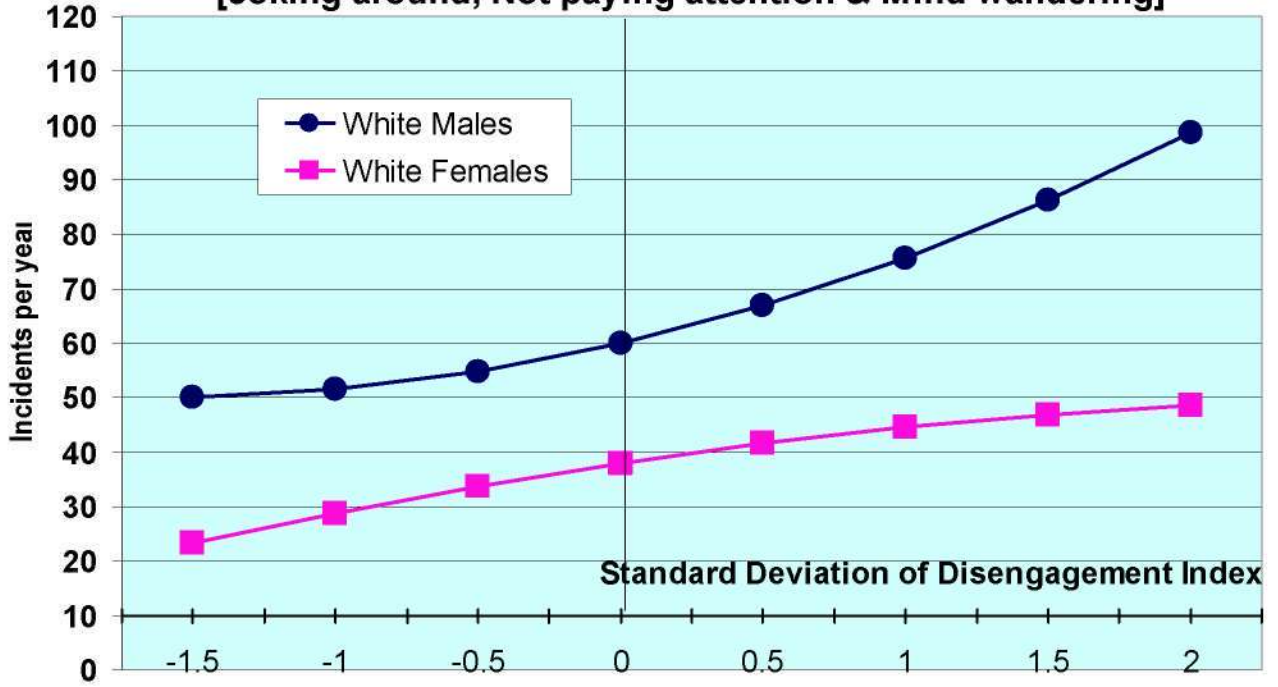
Fig. 15--Peer Harassment by Classroom Disengagement

[Joking around, Not paying attention & Mind wandering]

Simulations of the impact of disengagement controlling for like to learn, annoyed by disruptions, positive peer pressure, class discussions, homework time, time spent hanging out, in extracurricular activities, in solitary leisure and a host of student characteristics and their perceptions of teachers.

Fig. 16--Peer Harassment by Grade Point Average
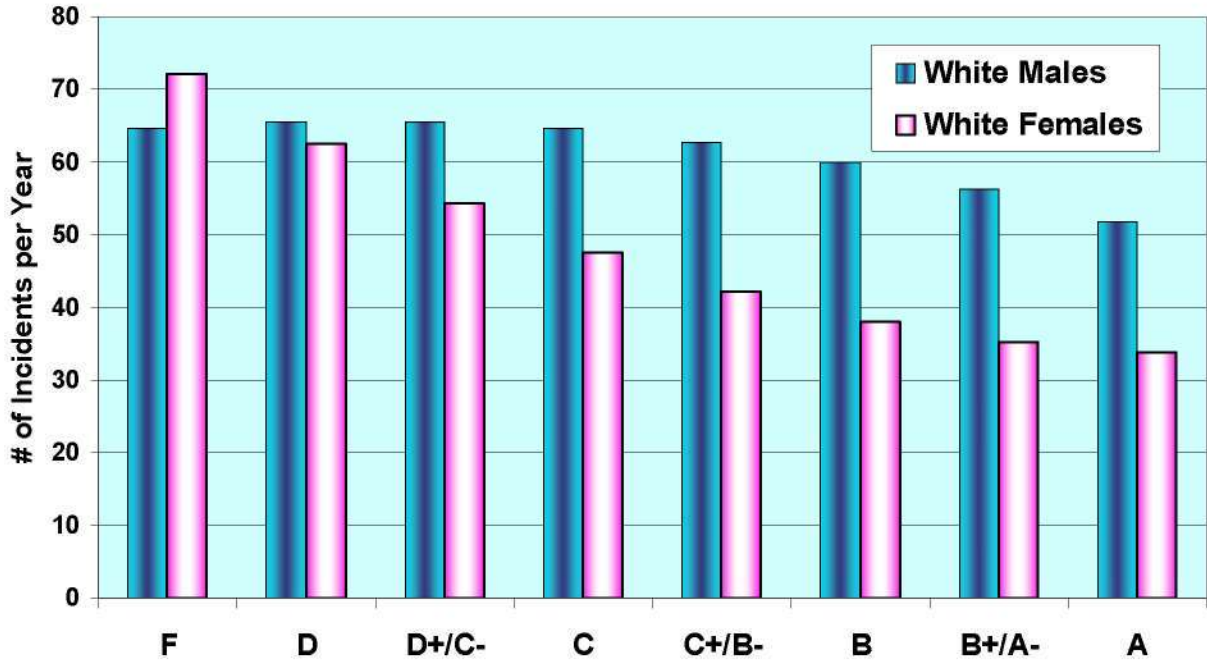
Simulations of the impact of GPA while controlling for 'like learning, positive peer pressure, annoyed by disruptions, disengagement, contributing to class discussions, homework time, time extracurricular activities, hanging out, in solitary leisure and a host of other student characteristic and their perceptions of teachers.

Fig. 17--Effects of Signals of Academic Orientation on Harassment Incidents per year for White Students
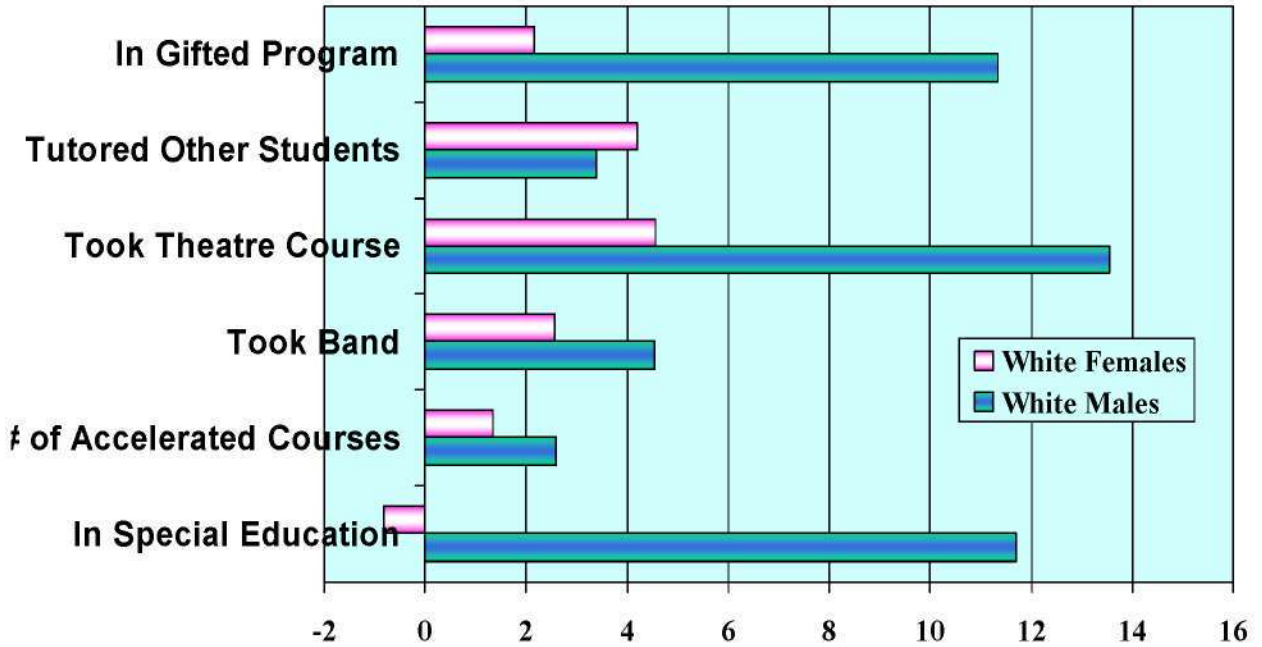
Mean # of Incidents was 84 for white males and 49 for white females. Remedial courses had no effect. Models control for disengagement, contributing to class discussions, like to learn index, annoyed by disruptions, positive peer pressure, time spent on home work, hanging out, extracurricular activities, solitary leisure activities and a host of other student characteristics and their perceptions of teachers.

Appendix A: Characteristics of High Schools Studied

	Sex	% to College	% Poor	Income wealth Ratio	% Hisp	% Black	$ per student	Median Teach-er Salary	H.S. Stud./ Grade	% Regen tDiplo m
Boynton M. S. & Ithaca H. S.	M	88%	14 %	1.21	3	10	$10,400	$42,000	450	74
Harbor Edge H.S.	F	96%	4 %	1.59	6	1	$12,100	$70,000	430	64
Newport Junction H.S.	F	94%	2 %	1.87	10	7	$13,400	$65,000	260	80
Longview H. S.	F	88%	5 %	.88	4	1	$11,500	$80,000	1000	55
Madison H. S.	F	83%	4 %	.79	6	3	$10,700	-------	330	53
Lakeside H.S.	F, M	89%	1 %	2.54	10	3	$11,600	$59,000	70	65
Wittison H. S.	F	90%	6 %	2.10	3	1	$14,100	$71,000	80	67
Coso H.S.	F	83%	4 %	1.28	1	5	$ 9,000	$45,000	420	69
NY State Low Need Districts		92%	3 %	1.86	5	3	$12,500	$64,700	---	92
NY State Public School Average		78%	18 %	1.00	18	20	$ 9,800	$49,500	---	78

Appendix C
Scales describing Student Motivation to do Well in School:

A number of summary indicators combining similar questions were defined to capture various aspects of student motivation to do well or try hard in school and to summarize student behavior and family background. Each of these variables is an average of the student's responses to related questions. Items from different questions with different response formats were often combined. Z scores were created by subtracting the mean 10th grade response of each component question from the student's individual response and then dividing by the 10th grade standard deviation for that question. A Z score measures the distance of the student's response from the mean 10th grade response in standard deviation units. If an individual item was not available, we used the other standardized variables to calculate the average. In order to make the variables easier to understand, each index was divided by its standard deviation to create a standardized variable with a mean of zero and a standard deviation of one. A one-unit change in the motivation indexes, therefore, is equivalent to a one standard deviation change in the scale. A movement of one standard deviation means one has moved from say the 50th percentile of a normal distribution to about the 84th percentile or from the 84th percentile to the 97.7^{th} percentile.

'I Like Learning' Index has an Alpha Reliability of .468. It is based on three questions.
'I find the history and science textbooks interesting,"
"I like the books and plays we read in English" and
"I enjoy doing math problems"

FRIENDS ARE PRO-LEARNING—The attitude of close friends toward learning and school achievement is indicated by responses to the following questions:
"My friends think it is important for me to do well in science at school",
"My friends think it is important for me to be placed in the high achieving class", and
"How important do your friends think it is to: a *"Study hard to get good grades?"*
                                                         b *"Participate actively in class?"*
                                                         d *"Continue their education beyond high school?"*
                                                         e.*"Go to one of the best colleges in the U.S.?"*
Response set was: "Very important," Somewhat important," Not too important," and "Not at all important."} Its Alpha Reliability is .778..

Annoyed by Disruptions-- is a normalized variable averaging normalized answers to the two questions about how annoying it is when other students sidetrack the teacher or joke around in class: *'It's annoying when other students talk or joke around in class?'* and *'It's annoying when other students try to get the teacher off track?'* Response set rant from strongly agree to strongly disagree. Alpha reliability = .742.

Behavior/Effort at School
'How often do you contribute to class discussion' with a response set of "Never, Seldom, Fairly Often, Often, Usually and Always." The mean response was very close to the "often" answer.

Hmwkhr is the average number of hours per day students report doing homework.

DISENGAGEMENT-- A high value for this variable indicates that the student often 'jokes around in class,' his 'mind often wanders during class', he seldom 'really pays attention.' This variable was created in the same way as the motivation variables, so it's mean is zero and its standard deviation is one.

Family Background Indicators
edpar is the average number of years of schooling of the student's two parents. (15.16 yrs).

Appendix Table D
Means & Standard Deviations
Second Wave of the EEA Survey of Student Culture

	White Males		White Females	
	Mean	Std. Dev.	Mean	Std. Dev.
Belief School is Zero-Sum				
If others study hard, it's harder to get A's [1→ 4]	1.98	0.77	1.92	0.70
Study Effort & Time Use				
Share Homework done [0→1.25]	.763	.241	.818	.205
Square of (Share of Homework done - .78)	.059	.0917	.044	.0605
Studying (hrs/day)	1.60	1.34	2.1	1.5
SQ of (Study hr – 1.87)	1.87	4.00	2.25	4.77
TV, listening to music, video games (hrs/ day)	2.51	2.01	2.22	1.98
Work for Pay (hrs/day)	1.12	1.99	1.04	1.89
Extra-curricular Activity (hrs/day)	1.87	1.71	1.57	1.50
Hanging out (hrs/day)	1.70	1.77	1.93	1.83
High Academic Achievement				
In Gifted Program	16.4	37.0	16.8	37.4
Tutored Other Students	18.4	38.8	27.1	44.5
Took Theater Course	15.0	35.7	22.9	42.0
Took Band/Orchestra Course	36.1	48.0	38.6	48.7
# of Accelerated Courses in middle school	1.0	1.3	1.0	1.3
Taking one or more honors or AP course	0.51	0.50	0.543	0.498
Taking at least one AP course	0.09	0.29	0.107	0.309
# of Honors & AP courses	1.26	1.59	1.37	1.63
Low Academic Achievement				
In Special Education	0.06	0.24	0.038	0.19
Took Remedial Course	0.26	0.44	0.243	0.429
Took a Blue Collar Vocational course	0.12	0.32	0.046	0.21
Friends College Goals				
Friends think it's important to go to one of the best colleges	-.035	1.013	.047	.950
Ability- Less visible to others				
Share of Teachers' lessons completely understood [0 to 1]	.685	.248	.672	.241
How quickly I Learn Things? [0→1]	.706	.187	.669	.171
Intrinsic Motivation				
Like Learning [SD=1]	-0.0045	1.03	0.025	0.922

Appendix Table A (cont)—2nd Wave EEA Survey

	Male		Female	
	Mean	Std. Dev.	Mean	Std. Dev.
Teacher Characteristics				
Teachers are Interesting Share of time [0→1]	.505	.214	.512	.202
I don't feel close to any of my teachers [1→ 4]	2.34	0.83	2.30	0.79
Music Listened to the Most				
Rap & Hip-hop	.684	46.5	.651	47.7
Pop	.270	44.4	.565	49.6
Modern Rock	.361	48.0	.282	45.0
Rhythm & Blues	.185	38.8	.229	42.1
Classic Rock	.200	40.0	.111	31.5
Dance & Techno	.151	35.8	.165	37.1
Heavy Metal	.179	38.4	.067	25.0
Country	.053	22.4	.113	31.7
Salsa or Latin	.076	26.5	.119	32.4
Jazz	.146	35.3	.079	26.9
Classical	.115	31.9	.102	30.3
Musicals	.036	18.5	.077	26.6
School Characteristics				
Grade in school	9.32	1.52	9.34	1.53
Middle School Grades (6 to 9)	.287	.452	.287	.452
Demographic Characteristics				
African-American	.220	.414	.229	.420
Hispanic	.079	.270	.076	.265
Asian	.080	.271	.077	.267
More Than One Race	.032	.176	.033	.179
Parents speak a Foreign Language at Home	.015	.034	.015	.033
Living in Single Parent Household	0.039	0.19	0.031	0.17
Blended Family	0.66	0.25	0.08	0.27
Number of Siblings	2.0	1.4	2.0	1.4
Parent's Education	5.1	1.5	5.0	1.5
Father's Education	5.1	1.6	5.1	1.6
D30sipar	.210	0.41	0.23	0.42
In Bilingual Education	.120	0.32	0.12	0.32
In English as 2nd Lang	.061	0.24	5.4	22.6
Books in Home Index [range is 1 to 5]	3.77	1.23	3.90	1.14
One Computer at Home	0.44	0.50	0.47	0.50
Two Or More Computer at Home	0.47	0.50	0.44	0.50
Dependent Variables				
Negative Peer Pressure	0.19	0.96	-0.25	0.84
Num of Incidents of Harassment	85.7	145.5	51.9	102.8

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Endnotes

[1] Brown, Eicher and Petrie (1986) asked 1297 students why joining a crowd was or was not important to them. The jock/populars cited friendships (24%), activities (14%) and support (21% eg. 'builds self-confidence' and a sense of 'being liked') as reasons for joining their crowd.　Wanting to improve one's reputation was cited as a positive reason by 9 percent of jock/populars and by 5 percent of the drugie/toughs crowd.

[2] During the fall of 1997 seven interviewers were hired to collect data for a study of high school peer cultures in eight high performing suburban New York State high schools. The team met frequently during the fall to develop a protocol for the open-ended interviews and a paper and pencil questionnaire that respondents completed just prior to their personal interview.　The interviewers were trained in interviewing techniques and used a tape recorder during the interview. We approached high performing high schools that were a short drive from the suburban residences of the Cornell students conducting the interviews during the winter break. Respondents were selected and parental permissions were handled by the cooperating high school. One hundred and thirty-five tenth graders were interviewed (most of them female) during January 1998. The following semester all but one of the interviewers took a seminar exploring qualitative research methodologies and read articles and books discussing student peer culture. The students then wrote an "ethnography" of the school they had studied. Student ethnographies were shared with the principal of the high school studied. A second wave of personal interviewing was undertaken with a convenience sample of male students attending Ithaca area middle schools and high schools.

[3] The Educational Excellence Alliance is a consortium of schools and school districts that are interested in learning how to more effectively help all their middle and high school students to achieve at higher levels and to respect individual differences. The Alliance offers its members a convenient means of assessing and diagnosing their student peer cultures in a way that allows them to compare themselves to other similar schools and to track changes over time.　During the 1998-99 school year, 134 schools in New York, Massachusetts, Connecticut, New Jersey, and Pennsylvania undertook a standardized assessment of the culture of their 10th graders and were sent reports comparing their students' responses to the responses at other comparable schools. The questionnaire was revised in January 2000 and another 270+ schools (nearly half of them middle schools) have participated since then. Many of the schools participating in this second wave of data collection are located outside of the Northeast. The reports sent back to each school point out areas of concern and have suggested reading materials that might be helpful in planning interventions designed to build a student culture that honors academic achievement and respects individual differences.

[4] Academic and peer status are highly aligned in elementary classrooms but not in middle school classrooms (Cohen and Lotan 1997a, 1997b; Lloyd and Cohen 1999; Chiu 2000)

[5] Uncertainty over who will be in the popular crowds and what norms will prevail is greatest in the first few months of middle school. Verbal harassment is also at it's highest level in 6th grade and is particularly likely to be initiated by popular students. Incidents of harassment are less common in 7th and 8th grade and are no longer more likely to be initiated by the most popular students (Espelage and Holt, 2004).　A stable pecking order of crowds now exists.

[6] Harassment is hard to define because insulting words are a pervasive part of peer interactions even among close friends where there is no intention to humiliate. Students told us that conversations with close friends are often sprinkled with insulting words. Insults intended to hurt and humiliate are different, they said, coming from kids outside their group or said in a different tone of voice or picking on a real (not fanciful) feature of the victim's persona. This makes it difficult though not impossible to define and enforce a prohibition against peer harassment.

[7] A number of recent studies have shown that non-random sorting of students into schools and classrooms is not the sole explanation of peer effects on learning (see Ammermueller and Pischke, 2006, Angrist and Lang 2002, Arcidiacono et al 2004, Betts and Zau 2003, Boozer and Cacciola 2001, , Hanushek, Kain and Rivkin 2002, Hoxby 2000, Sacerdote 2000, Uribe, Murnane and Willett 2003, Vigdor and Nechyba 2004, Wilms and Somers 2001, Zimmerman 1998). The causal peer effects found by these studies imply that an increase in everyone's engagement is likely to boost learning more than an equivalent increase in ones own engagement.

[8] Figlio's (2003) study of the effect of disruptive children on peers is particularly persuasive. He shows that boys with feminine sounding names are much more likely to become disruptive during middle school. He then measures the effect of disruptive students on annual learning gains of classmates in longitudinal data from a large Florida school district. Using the number of boys with feminine names in a classroom as an instrument for disruptive students, he concluded that "Adding one more disruptive child to the classroom…lead to 2.7 to 4.0 national percentiles lower mathematics performance and 2.9 to 3.3 percentage points increased likelihood that peers will be suspended at least once for five or more days."

[9] Students in California, Florida and Texas whose high school class rank is better than a fixed state wide cutoff are guaranteed admission to at least one (or in the case of Texas any) state university without regard to SAT, ACT scores or the rigor of the high school curriculum. This policy pits those near the statewide cutoff into direct competition with other students near the cutoff at the school.

[10] A study of norms at a predominantly Jewish high school in New York City found peers thought that being bright was fine as long as you were not studious. Getting good grades did not get one into trouble with one's peers, it was **trying** to get good grades. Abraham J. Tannenbaum, "Adolescents' Attitudes Toward Academic Brilliance." PhD Dissertation, New York University, 1960.

[11] Darwin wrote in *The Descent of Man*: "Man is the rival to other men [males]; he delights in competition, and this leads to ambition which passes too easily into selfishness. These latter qualities seem to be his natural and unfortunate birthright (p. 326)."

[12] Envy also arises in arenas such as sports and dating. Girls who attract guys by acting in a sexy manner are often accused by other girls of being a "slut." Athletic ability sparks envy but not denigration because it generates so many externalities. Denigrating those accomplishments marginalizes the critic, not the athlete.

[13] Two examples follow. Paula spent a great deal of time playing sports (15-19 hours a week) and hanging out (10-14 hours a week). Nevertheless: *"I'm picked on all the time because of my size. I guess it's supposed to be a joke, although sometimes I care…Just because I'm smaller, they know they can make fun of me. I'm not really upset—just angry."* When asked where she sits at lunch, she laughed nervously and admitted, *"I mostly eat my lunch in the bathroom. There are groups in the cafeteria and I don't really feel comfortable there."* [Student at Newport Junction High School, interviewed by Lara Gelbwasser, 1998.] Donna Eder's ethnography of Woodview High School provides a second example. "Students also ridiculed female isolates by making fun of their perceived unattractiveness…. A common way to do this was for boys to convey their romantic interest in a particular isolate and make fun if she took it seriously….[Sharon explained to Stephanie Parker, the interviewer] 'Now they really make fun of her [Theresa, a student who had fallen for the ruse] because she'll start to cry.'" (Eder, 1995 p. 50).

[14] Membership in a popular crowd confers opportunities to learn from the acknowledged local masters of adolescent social interaction and to practice these social skills. Social learning is more efficient when learners copy the behavior of skillful models. Learners defer to the model in order to more efficiently learn the package of skills the model promotes and teaches. Neophytes will flock to models that have prestige (ie. influence and freely given deference from others) and the size and obsequiousness of a model's followers is the signal that identifies high prestige models. Young people following this strategy will have a fitness advantage (more likely to have many children who survive to adulthood) and this should have resulted in humans gaining a predisposition to both mimic and give deference to high prestige individual's of the same gender. There is a great deal of evidence that humans behave as this evolutionary model predicts (Gintis 2000; Henrich and Gil-White 2001; Richerson and Boyd 2005). "Mathematical models show that the strength of prestige bias [in social learning] depends on the correlation between traits that *indicate* success and the traits that *cause* success….prestige bias can also lead to an unstable, runaway process much like the one that may give rise to exaggerated characters such as peacock tails (Richerson and Boyd, 2005 p.125)." Secondary school cliques and crowds are in some respects modern incarnations of this mechanism of group socialization. In most American secondary schools new students learn "appropriate" social behavior from small groups of slightly older adolescents, not teachers.

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[15] Steinberg, Brown, and Dornbusch's (1996) study of nine high schools in California and Wisconsin concluded that academic excellence is not highly valued by peers: "...less than 5 percent of all students are members of a high-achieving crowd that defines itself mainly on the basis of academic excellence... Of all the crowds, the 'brains' were the least happy with who they are—nearly half wished they were in a different crowd (1996, 145-146)."

[16] The dependent variable is the arithmetic sum of the number of incidents of harassment (not the log of the number of incidents or some other non-linear function of the count of incidents) because the utility function (eq. 9 above) specified a linear relationship. A couple of incidents per year are not consequential. Daily or weekly harassment will have much bigger effects on well being, so we are primarily interested in the prediction of frequent harassment.

[17] The self-reported academic ability index is derived from two questions. The first is "How quickly do you learn things?" with a ten category response set running from "Slower than most," through Average' up to 'Faster than anybody else.' The second question was: "About what % of the time... do you completely understand the teacher's lesson?" Possible responses were: "10% or less; 11% to 35%; about half the time; 65% to 89%; and 90% or more." Both variables were deviated from the integer value nearest the 30th percentile. The quickly learn variable was divided by 1.8 to make it's standard deviation close to the SD of the 'completely understand variable and then added. GPA question was: "What was your grade point average last term?" with responses running from A, A-, B+, down to D+, D, D-/F.

[18] The possible responses were "10% or less", "11% to 35%", "About half the time", "65% to 89%" and "90% or more."

[19] This suggests the possibility that nerd harassment may sometimes reflect rivalries between different groups of students with high academic aspirations (ie. the preps may be trying to suppress academic competition from nerds and geeks). We, unfortunately, did not ask whether the targets of nerd harassment were members (or non-members) of the clique doing the harassing. Space constraints also prevented us from asking respondents what their relationship was with the students who harassed or bullied them. This issue should be examined in the future by careful socio-metric analyses of bully-victim relationships.

[20] We checked the sensitivity of our findings to this decision by estimating a model including an index of the student's self esteem. Students with high self esteem were significantly less likely to be regularly harassed. Adding this variable, however, only slightly reduced the coefficients on the square terms of the classroom engagement and pro-learning attitudes indices so our findings regarding the concavity of the relationship between engagement and harassment is unaffected.

[21] "Time spent watching TV, playing video games and listening to music alone or with family" is endogenous. When we dropped it from the model, however, coefficients on attitude and engagement variables changed very little.

[22] The *"teachers make the subject interesting"* scale was designed to measure the quality of the teaching. Good teaching would be expected to improve classroom atmosphere and reduce nerd harassment On the other hand, very positive statements about teaching may also signal that the respondent is a "suck up" in the eyes of classmates. This should have the opposite effect on peer harassment. The other six attitude and behavior scales are cleaner measures of pro and anti-engagement attitudes, so we dropped the square of the *"teachers make it interesting"* variable from the preferred model and focused on just six core indicators of engagement. Robustness of our results was checked by estimating alternative specifications that included none, some and all of our four "quality of teaching" variables. The coefficients on the six pro-learning attitude/behavior scales that are our focus were not changed by the inclusion or exclusion of quality of teaching variables.

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[23] Friendship networks and tracking can have a big role in whether and how memes and norms spread. Contacts by proselytizers are not random, they occur through friendship networks. The contrasting structure of the friendship networks of advocates for competing norms may make a big difference. A proposed norm originating among vocational students who spend part of their day at another facility or on coop jobs is not likely to spread very far. Similarly, a norm originating among gifted students who spend most of the day together is also not likely to spread. Students who spend lots of time playing video games or role playing games will also be unsuccessful proselytizers for their norms. When, however, a norm originates in a sports team or among students who like to party, an influence cascade is much more likely to develop.

[24] A member of the popular crowd at a school studied by David Kinney said "At lunch we sit at our own table [but] if you go out to lunch with the wrong person, rumors would go around that you went to lunch with a geek!"(Kinney 1993, p. 27)

[25] Ostracizing and harassing a student clique clearly sends the message: 'Why don't you just drop out?' Nerds and geeks have teachers and college plans to help maintain their morale, disruptive students do not. The harassment suffered by kids identified as 'burnouts, druggies and losers' may be one reason why dropout rates are so high in the U. S., despite minimal graduation requirements and very high rates of rates return to finishing high school.

[26] One can imagine a group of academically engaged students with poor social skills creating a subculture that supports a 'learning and engagement are really cool' norm. But without a major change in how schools are organized they have no real prospect of persuading the bulk of the students at typical American secondary schools to adopt such a norm.

[27] Hard working students who hide their effort and engagement from classmates do not stimulate classmates to work harder. Indeed high GPA students who claim to be disengaged are in effect saying: "Respect me because I am so smart I don't have to work to excel. Anyone who gets top grades by working hard is a 'greasy grind' (in 1950s slang), 'suck up' (1990s slang) or "overachiever." Their behavior promotes and validates school wide academic norms that encourage everyone to internalize a goal-- "Effortlessly appear to do relatively well"—that reflects an entity or fixed view of one's abilities. Students who view their abilities as fixed rather than malleable tend to give up when a tough problem is encountered and to avoid difficult tasks where success is not assured. When randomly selected students were taught that ability is malleable, their effort, learning and skill development went up (Dweck 2000). In team sports peer norms are completely different. Outcomes are achieved collectively and celebrated jointly. Teammates respect the athletes who train the hardest, who play the hardest and who sacrifice their body for the team.

[28] When pro-engagement role models (P^*) become more prevalent, the psychic costs of revealing a high level of engagement would be likely to fall ($\Theta_{P|P^*} < 0$, $\Theta_{P \cdot P^*} < 0$) and this might cause other engaged students to stop hiding their engagement and become advocates for learning ($1 > P^{*j}_P > (1/M) > 0$). This would greatly complicate the model so, we assume no influence cascades on students choosing to go public about high levels of academic engagement (ie. $P^{*j}_P = [1/M]$).

[29] Students treat the visible short run signals (grades and test scores) of and payoffs to learning as the primary indicator of the long run benefits of learning that will accrue to them. The signals of learning visible to parents, employers and colleges provide a poor description of the skills and knowledge achieved by the student. (Grades and test scores are often not made available to employers and are in any case imperfect proxies of the learning that has occurred in school).

[30] Academically engaged classmates might make school more fun by generating interesting classroom discussions and lowering the frequency of class disruptions. Alternatively, they might embarrass you by solving problems or answering questions that you are not able to answer or by reducing opportunities to socialize during class.

[31] Indeed the fact that norms are defined and enforced by cohesive groups (not by a single charismatic individual) makes them more likely to be in the group's self-interest. "In every human group there is less reason to guide and check impulse, less capacity for self-transcendence, less ability to comprehend the needs of others and therefore more unrestrained egoism than the individuals who compose the group reveal in their personal relationships." Reinhold Niebuhr, Moral Man and Immoral Society, (New York, Charles Scribner's Sons, 1933), p. xii.

[32] In 1980 seventy-five percent of the 10th graders in the bottom quartile on achievement tests said they planned to attend college. National Center for Education Statistics, *Digest of Education Statistics*, 1993, p. 137.

[33] Ten years after completing high school in 1992 only 3.3 percent of students in the bottom quartile on the battery of achievement tests had actually obtained a Bachelors degree and only 4.1 percent had gotten an Associates degree. Students in the top quartile were 20 times more likely to get a Bachelors degree. National Center for Education Statistics, *Digest of Education Statistics*, 1998 p. 329. When this information is presented to students, it should be stressed that college completion rates are influenced by absolute achievement levels not ones class rank and that poor achievement in the early years of secondary school can be overcome by hard work in the upper grades.

[34] Making college attendance and completion a part of a school's ethos need not marginalize career and technical education (CTE). Many of the jobs that used to be filled by young high school graduates, now require a strong background in writing, math and science and a longer period of occupationally specific training. This training is now being done partly in high school and partly in community college. Consequently, vocational teachers should present their program as the occupational equivalent of Advanced Placement courses in academic subjects. Many community colleges give college credit for advanced CTE courses. Those who graduate with three or four courses occupational courses earn substantially more and are better able to support themselves while attending college. At the end of 10th grade, students with low academic achievement levels should be required to develop a backup plan that involves training for immediate employment after high school.

[35] Other ways of broadening participation would be to include scores on subject matter tests taken by students in a particular course (*eg.* 3rd year French) or in the whole school (*eg.* the state's 7th grade science test). As in sports, fair competition can be ensured by placing small schools and schools serving disadvantaged populations in separate leagues. While cable TV broadcasts of High School Bowl-like contests can be a component of the program, most of the points obtained by a school's team should come from assessments of the performance of the entire team on authentic tasks like writing an essay, giving a speech, determining the chemical composition of a compound, working out long mathematics problems, writing a computer program, or fixing a car.