

Fix your attitude: Labor-market consequences of poor attitude and low self-esteem in youth

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Abstract

Using longitudinal data on a cohort of high-school graduates, I show that individuals who reveal poor attitudes and low self-esteem as high-school students attain fewer years of post-secondary education relative to their high-school cohort, are less likely to be employed for pay fourteen years following high school and, where working for pay, realize lower earnings. Further, I find evidence that poor attitude and esteem in high school are significant predictors of the degree of supervision under which individuals ultimately work. Poor attitude and esteem in youth are also closely associated with jobs that require individuals to spend their time working more with things, as opposed to people, for example. These relationships suggest that real economic consequence exist in fostering positive attitude and esteem in youth.

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In this paper, I assess the role of pre-labor-market attitude and self-esteem in explaining disparities in the subsequent labor-market experience of a sample of high-school graduates. The apparent importance employers ascribe to attitude and self-esteem gives clear reason to expect that such a relationship does exist. In a recent national survey that asked employers to rank the importance of particular applicant-traits for non-supervisory and production positions, “applicant’s attitude” was the only trait that was reported to be “very important.” In fact, “academic performance, years of schooling completed, teachers’ recommendations, and industry based credentials (certifying applicant skills)” all ranked lower (Bowles, Gintis and Osborne, 2000). A second, independent survey of employers in Holzer and Wissoker (2000) also suggests that more weight is placed on a “good attitude” than on “basic skills” among new hires of low-skilled workers.

I demonstrate that such survey responses are corroborated by real economic consequences. Using longitudinal data on a cohort of 1972 high-school graduates, I show that high-school students who have negative attitudes or self-esteem attain fewer years of post-secondary education relative to their high-school cohort, are less likely to be employed for pay fourteen years following high school and, where working for pay, earn less. Allowing for the labor-force participation decision, I also show that there is a higher incidence of unemployment among these individuals. Further, I find evidence that poor attitude and esteem is associated with positions later in life that require the individual to spend “a great deal of time” working with things, as opposed to people, for example, and that those who exhibit poor pre-labor-market attitude and esteem are subsequently more closely supervised at work, and given less discretion in their daily

activities. Thus, attitude and esteem in youth are shown to have important economic implications long after the time that they are directly observable to others.

In the following section I briefly discuss the related literature. Specifically, three areas of the literature are considered: the effect of joblessness on self esteem, the relationship between other non-cognitive skills or worker attributes and labor-market outcomes, and the effects of other aspects of general human capital such as physical attributes and appearance. Section 2 then introduces the data and methods used in investigating the relationship between attitude and esteem and labor-market outcomes. Empirical results are reported in Section 3, and are followed by some discussion and concluding remarks.

1. Previous Literature

This paper is most closely related to three areas of existing literature. First, there exists a small literature that documents a relationship between labor-market activity and self-esteem. However, this literature has focused more on the damage of joblessness on an individual's perception of self-worth than on the direction of causality considered here. For example, Goldsmith, Veum and Darity (1995) and (1996) find relationships between contemporaneous joblessness and esteem and historic joblessness and esteem, respectively. Arguably, the causality between attitudes and jobless spells is not clearly in one direction or the other. In this paper, I contribute clear evidence of the reverse causation – causation running from attitude and esteem to future labor market outcomes.¹

Second, there is a growing literature on the importance of non-cognitive skills in labor-market outcomes. This literature suggests that measures of aggression and withdrawal (Osborne,

¹ While contemporaneous measures of attitude and labor market characteristics appear rife with endogeneity issues, this is of less concern for our immediate purpose as attitude and esteem in high-school are measured prior to labor-market entry and are therefore necessarily exogenous to the outcomes considered here. See Goldsmith, Veum and Darity (1997) for a discussion of such endogeneity issues and results from the simultaneous estimation of contemporaneous measures of esteem and wages.

1999), individual motivation (Goldsmith, Veum and Darity, 2000), behavioral problems in high school (Cawley, Heckman and Vytlačil, 2001), one's "locus of control" (Goldsmith, Veum and Darity, 1997; Osborne, 1999; Coleman and DeLeire, 2000), and mental health (Bartel and Taubman, 1979, 1986; Frank and Gertler, 1991; Mullahy and Sindelar, 1993) each have predictive power with respect to wages. Further, there has been a positive wage premium associated with participation in high-school athletic activities (e.g. Barron, Ewing and Waddell, 2000; Eide and Ronan, 2000) and to leadership skills developed in high school (e.g.. Kuhn and Weinberger, 2002). The current analysis differs from these in its focus on attitude and esteem as it relates to a broad array of labor-related outcomes.² The associations revealed in these data are often strong and point to the far-reaching implications made possible by fostering positive attitudes in youth.

A third area of related literature regards the labor-market effects of an employee's physical attributes – which may constitute aspects of general human capital. Hamermesh and Biddle (1994) introduce physical appearance and beauty to the literature as potential factors in wage determination, estimating a five to ten percent wage penalty to perceived "plainness." As one may reasonably expect, *a priori*, that attitude and esteem are correlated with physical appearance (e.g., people of better-than-average appearance tend to have a better attitude and/or esteem), estimates of the effect of beauty or the effect of attitude may each proxy for general human capital that is of some value to the average employer.³ Note that measures of physical appearance are not commonly available, however, which often precludes researchers from

² The measure of attitude and esteem used here is complementary to the measures adopted in Goldsmith, Veum and Darity (1997), Persico, Postlewaite and Silverman (2002), and others. Goldsmith, Veum and Darity (1997) adopt a measure consistent with Rotter (1966).

³ Of course, feedback effects (e.g., ugly people invest less in human capital as they expect a lower return) may also exist.

separating the influence of potential influence from other correlates.⁴ Unfortunately, this remains the case in the data analyzed here. Likewise, the data do not include a measure of height, which has also been shown to contribute to earnings. However, where evidence of a wage premium for height does exist, controlling for esteem has been shown to render height insignificant (Persico, Postlewaite and Silverman, 2002).⁵

With these literatures in mind and the employer surveys that suggest attitude has become an important element in hiring decisions, it seems reasonable to expect that one's attitude and self esteem be related, through general human capital, to one's productive capability. The results suggested by the data are consistent with employers having learned over time to associate perceptions of poor attitude and esteem with lower productivity –bidding down employment and wage offers. Anticipating such treatment, those with poor attitude and self esteem may choose to invest less in post-secondary education.⁶ However, they may also self-select into positions where the returns to such attributes are lower – spending a great deal of on-the-job time working with “things,” for example, and much less time working with people, doing administrative, clerical or computational paperwork, or working with “ideas” or “thinking.”

⁴ This does suggest, however, that to the extent that one's perception of an individual's beauty is inseparable from one's perception of the individual's esteem, studies of appearance that rely on the evaluation of a picture (Hatfield and Spretcher (1986); Frieze, Olson and Russell (1991); Hamermesh and Parker (2003)) may more directly measure true physical appearance than those that rely on data generated out of personal interviews where the interviewer evaluates the physical appearance of the respondent in person as part of the survey design (Straus, Miles and Levesque, 2001). See Hatfield and Spretcher (1986) for a summary of (the social psychology literature on) the influence of beauty on a variety of noneconomic outcomes.

⁵ Persico, Postlewaite and Silverman (2002), focus, in part, on the predictive power of youth- vs. adult-height, so, from among the literature that has documented a height premium, their work is of particular interest here. While they also conclude that “esteem and participation in social activities affect wages through largely independent channels,” I control for such participation in estimating rank, education and wages. See Mobius and Rosenblat (2003) for discussion of specific transmission mechanisms through which beauty premiums may evolve. Among other summary statistics, they report that 20 percent of the beauty premium is due to the subject's confidence.

⁶ There is some evidence that the marginal effect of education on wages is decreasing in poor attitude. However, the evidence is not a robust result across all measures of attitude adopted in this paper.

2. Data and Methods

To analyze whether one's attitude and esteem in youth determine future labor-market outcomes I consider the National Longitudinal Study of the High School Class of 1972 (NLS-72), a representative survey of high school seniors, which records both pre-labor-market measures of attitude and subsequent labor-market outcomes such as educational attainment, labor force participation and wages. Among the high-school experiences recorded in this survey, three series of questions from the Attitudes and Opinions portion are of particular interest. In one series of questions, respondents were asked how they felt about self-image statements such as "I take a positive attitude toward myself," and "I feel I am a person of worth, on an equal plane with others," and "On the whole, I'm satisfied with myself." In a second series of questions, focusing more on the respondent's attitude and outlook on life, respondents were asked how important were, for example, "Being successful in [their] line of work," and "Being able to find steady work." A third series asks, in particular, how not feeling "part of the school" had potentially interfered with their high-school education. These and other survey questions are reproduced in Table 1, where the distributional properties of responses to these questions are also provided.

The basic methodology adopted in this paper is to regress labor-related outcomes on measures of attitude and esteem taken prior to entry into the labor market, controlling for other factors that may influence these outcomes. As the focus here is on the predictive power of *pre*-labor-market attitude and esteem on *future* outcomes, empirical tests will not generally suffer from the endogeneity of attitude. Such endogeneity issues would be more problematic if one

were to focus on contemporaneous relationships, and individuals who did relatively well in the labor market, in turn, revealed better contemporaneous attitudes relative to their cohort.⁷

As a basis for the analysis of attitude and esteem, I create a composite index of survey responses to the first wave of the NLS-72. Some responses may more or less closely represent the true “attitude and esteem” I intend to analyze. Thus, estimation results are reported across four alternative indices. As the use of subjective data has been met with some skepticism in the past (e.g. Freeman, (1978)), these alternative indices also provide additional transparency, giving a valuable indication of the robustness of the reported relationships. In particular, I proceed systematically along two lines.

First, I report results across the content of the index. For example, that a respondent asserts that strong friendships are “not important” may not systematically represent the “negative attitude” one might initially contend. In fact, in certain types of work, such a response may be indicative of a positive productivity differential. As such, in the reported empirical results, estimated equations adopt either a “*broad definition*” of attitude or a “*narrow definition*” of attitude, according to the range of responses included in the index. Responding that strong friendships are not important, for example, contributes to the broadly defined index of poor attitude, but not to the narrowly defined index.

Second, while I adopt a mechanism similar to that of the common Rosenberg (1965) self-esteem scale, I also adjust the intensity threshold required in order for a response to qualify as being indicative of negative attitude or esteem.⁸ For example, following each question in the

⁷ Again, see Goldsmith, Veum and Darity (1997) for the discussion of endogeneity issues with respect to psychological capital and wages.

⁸ The Rosenberg Self-Esteem Scale is designed, in part, to limit the extent of “anchoring,” which is potentially problematic in such survey responses as two otherwise identical people may “anchor” their subjective reactions differently. As noted by Goldsmith, Veum, Darity (1997) and others, this procedure has been adopted by researchers because where a person “anchors” their scale “is more likely to influence their intensity of agreement with a statement than whether they agree or disagree in principle with the statement,” p.818.

BQ21 series, respondents are given the opportunity to take a position of “Agree Strongly,” “Agree,” “No Opinion,” “Disagree,” or “Disagree Strongly.” Individual responses are quantified on a two point (0,1) scale with, for example, a “*strong position*” on a particular question being triggered only by a response of “Disagree (Agree) Strongly” and an “*at-least-weak position*” triggered by either a response of “Disagree (Agree) Strongly” or “Disagree (Agree).” I adopt the convention of assigning a point value of one to negative responses, such that the index of attitude and esteem is increasing in what would generally be considered poor attitude. By comparing attitude indices derived from “*strong*” positions to those derived from “*at-least-weak*” positions, the analysis reveals the robustness of the findings if not how the intensity of feelings may matter. In short, exploiting the richness of the survey design in this way yields a fuller characterization of any potential relationship. All four indices are defined in Table 2.⁹ Where appropriate, controlling for attitude and esteem in an intermediate year also ensures that only the additional effect of an early, pre-labor-market attitude is captured.¹⁰

The sample used is less than the initial size of the survey for a variety of reasons. As I am considering the longest time period the data will allow, attrition accounts for the largest decrease in sample size. However, a substantial number of participants did not provide specific demographic information on such factors as age, race, parent’s education, marital status, or

⁹ While I do not model the process that leads to poor attitude or low self-esteem, in a separate procedure (not reported), the *Attitude* indices are generally found to be decreasing in ability, higher for students with low aptitude, lower for those who participated in high-school athletics, and, at least marginally, higher where parents are more educated. Black students seem to reveal lower broadly-defined indices, but a higher “*narrow definition – strong position*” index, as do other “non white” students. There is generally little explanatory power in these estimates, however, with R²s less than one percent. That the obvious controls (e.g. gender, race, ability, aptitude, parent education controls, family income) explain so little of the variation in *Attitude* is consistent with attitude being driven more by one’s nature than by one’s environment. Nonetheless, these explanatory variables are included in subsequent analysis to keep from biasing the estimated effect of *Attitude* due to correlation with omitted variables. Note, that each of the *Attitude* indices are not significantly influenced by reported family income – contrary to what may be a common *a priori* expectation.

¹⁰ As this is not always available in the data, missing observations are controlled for with an indicator variable whenever the intermediate measure is used. However, results are robust to the sample of observations for which this information is available. For all *Attitude* measures, the 1972 measure is insignificant in predicting a missing 1979 measure.

school size and type, each of which are used as possible controls in the following estimation procedures. A combined score from comprehensive tests over mathematics, verbal skills and reading is used to obtain a measure of cognitive ability which is also unavailable for some respondents, as is high-school rank. For a small number of remaining individuals (65), the attitude index described above is unavailable.¹¹

3. Empirical results

In this section I investigate whether there is any predictive power in early signs of negative attitude and esteem that can warn of elevated propensities for sub-standard performance in subsequent labor-market outcomes.

3.1 Poor attitude and high-school performance

While the bulk of the analysis investigates the relationships between pre-labor-market attitude and future outcomes, as a point of departure I begin by identifying the correlation between attitude and esteem in high school and contemporaneous performance. In so doing, I consider the following equation:

$$(1) \quad \ln(R_i) = \alpha_0 + \alpha_1 \ln(1 + Attitude_i^{jk}) + \beta' X_i + e_i \quad ,$$

where i indexes student respondents, R_i is the respondent's percentile rank in the year of high-school graduation, j indexes the scope of questions included in the attitude index, $j = \{broad, narrow\}$, k indexes the strength of positions expressed through the attitude index, $k = \{strong, at-least-weak\}$, X_i is a vector of controls for gender, race, cognitive ability (as measured by a

¹¹ The NLS-72 consists of 22,652 observations. Restricting the sample to those who had attended and completed high school by 1973 reduces the sample to 22,638. Of these, 10,727 did not respond to the final follow-up survey (1986) used to determine subsequent educational attainment, labor force participation, and earnings. Of those remaining, 4,108 did not provide demographic information on such factors as age, race, parent's education, or marital status, and another 152 did not provide information on school size and type. Finally, for 1,053, there is no information on class rank and/or ability. This leaves a sample size of 6,598. Attitude measures (from 1972) are not available for 65 respondents. This explains the initial sample size of 6,533. Note that after observations with missing values are dropped, the sampling is such that one is not able to generate a nationally representative sample using the weights included with the dataset. Therefore, reported results do not use these weights. Qualitative results are generally robust to using sampling weights, however.

combined score from comprehensive tests over mathematics, verbal skills and reading), aptitude, parent's education, and whether R_i resides in a central city, and e_i is an additive error term.¹²

Unlike subsequent tests, the measures of high-school performance and attitude are contemporaneous and the potential endogeneity makes assigning causality difficult. Estimating percentile rank and attitude simultaneously (not reported) suggests that if a significant causal relationship exists at all, it may run from rank to attitude. However, finding valid instruments from among the data – variables correlated with attitude but not e_i – is difficult. As such, confidence in the estimated coefficients of such a model would be suspect.

As a consequence, an appeal to the narrowly defined measure of attitude is advantageous here as this measure is likely to better characterize the true relationship, as it omits responses to survey questions that are most likely to be directly influenced by contemporaneous performance measures and keeps those that are, arguably, most likely to be exogenous. For example, the importance of “being able to find steady work,” which is included in both broad and narrow measures, more likely transcends the influence of current performance than the respondent feeling like “a person of worth, on an equal plane with others,” which is only included in the broadly defined indices.

Focusing, then, on the narrowly defined indices, the degree to which a respondent reveals a negative attitude is strongly correlated with overall academic performance. Where attitude is poor, performance is lower.¹³ From the pooled-sample estimates in Column 5 of Table 3, with respect to the sample of respondents, being at the median of the upper quartile of the “*narrow definition – at-least-weak position*” index is associated with a 10.9 percent decline in percentile

¹² Results are robust, throughout, to a linear treatment of *Attitude*.

¹³ While I forgo discussion of the results of columns 1 through 4 due to the increased potential for endogeneity to be an issue, note that the results are consistent with those on which I do focus.

rank compared to the median of the lower quartile.¹⁴ Where attitude index counts only strongly-held positions (i.e. Column 7), the relationship between percentile rank and attitude is stronger.

One may recognize that parents and educators implicitly observe attitudes in one student relative to that student’s cohort, or at least find it less costly to do so. As such, Table 3 also reports the results of estimating Eq. (1) controlling for high-school-specific fixed effects. The coefficients on the attitude variables in columns 6 and 8 should therefore be interpreted as the effect on percentile rank of a respondent’s attitude relative to students within the same high-school. Across all specifications, the association between attitude and performance is qualitatively robust to controls for any unobserved heterogeneity in the student’s immediate cohort, suggesting that signs of poor attitude observed in specific students within the same class are meaningful.¹⁵

3.2 *Poor attitude and educational attainment*

Turning now to consider the predictive power of high-school attitude and esteem in future outcomes I begin by considering the years of education attained beyond high school, from the 1986 follow-up survey. In general, the equation of interest is

$$(2) \quad \ln(E_i) = \alpha_0 + \alpha_1 \ln(1 + Attitude_i^{jk}) + \beta' X_i + e_i \quad ,$$

where E_i is the number of years of education beyond high school as of 1986 and X_i is a vector of controls.

¹⁴ Predicted percentile ranks for the median of the lower quartile (i.e. $Attitude^{nw} = 0$) and the median of the upper quartile (i.e. $Attitude^{nw} = 2$) are 59.7 and 53.2, respectively.

¹⁵ Controlling for unobserved heterogeneity also exposes the effect of race and type of residence in a way that the pooled-sample estimates do not. Specifically, where a survey respondent is reported to be “black,” the pooled sample estimates suggest that percentile class rank is higher, indicating that black respondents perform better on average compared to white respondents, across the entire sample. However, controlling for school-specific unobserved heterogeneity, “black” is not associated with an increase in percentile rank relative to students in the same high school. While the pooled sample makes no distinction between other “non-white” students and “white” students, controlling for high-school fixed effects reveals that other “non-white” students seem to perform poorly relative to their immediate cohort of classmates. Further, as may be expected, while a parent’s level of education does not influence percentile ranks across the pooled sample, within a given high school, a parent’s level of education is a significant predictor of a student’s performance relative to their cohort.

Estimating Eq. (2) across attitude indices suggests that respondents who reveal attitude deficiencies through their responses to the survey questions attain significantly fewer years of post-secondary schooling, measured roughly fourteen years following graduation.¹⁶ Controlling for each individual's performance in high-school, cognitive ability and the education level of parents, participation in high-school athletic programs and for potential birth-order effects, the results in Table 4 suggests that across three of the four attitude indices (accounting for both breadth of definition and strength of position), higher investments in post-secondary education are made by those who reveal more positive attitudes.¹⁷ With respect to the sample of respondents, pooled-sample estimates across the four alternative indices suggest that one who is at the median of the upper quartile of $Attitude^{jk}$ attains up to 15.7 percent fewer years of post-secondary schooling within fourteen years of high-school graduation compared to one at the median of the lower quartile.¹⁸ Further, these results are robust to controlling for unobserved heterogeneity at the school level (in Columns 2, 5, 8 and 11), which should also be encouraging to parents and teachers if they find it less costly to discern attitudes *relative* to the smaller cohort than to discern attitudes in a population.

While I focus specifically on the effect of pre-labor-market attitude, there are at least two reasons one might consider the effect of a measure of attitude taken somewhere between high school graduation and the 1986 follow-up survey. First, it is not unlikely that attitudes change in the first few years following high school and this change may nullify any negative outcomes associated with the earlier-revealed poor attitude. Second, an omitted variable bias may assign to pre-labor-market attitude a relationship that is actually driven only by its correlation with an

¹⁶ Note that results are also robust to an educational attainment as of 1979.

¹⁷ Consistent with the earlier discussion of rank and attitude, not controlling for attitude (not reported) assigns additional influence to percentile rank.

¹⁸ From columns 1, 4, 7 and 10 of Table 4, the broad-weak estimated difference is 15.7 percent; broad-strong, 13.2 percent; narrow-weak, 6.3 percent; and, narrow-strong, 3.7 percent (estimated coefficient is insignificantly different from zero).

intermediate, post-graduation attitude. A like measure of attitude is constructed using the 1979 follow-up survey responses.¹⁹ In short, our initial results are robust to the inclusion of this intermediate attitude measure while, as may be expected, the inclusion of the additional measure of attitude lowers the significance of the pre-labor-market measure. Controlling for attitude and esteem in 1979, a respondent's attitude in 1972 remains a significant predictor of educational attainment in all but the most conservative “*narrow definition – strong position*” case reported in Column 12, where it was also insignificant previously. While there are significant differences across race and gender in educational attainment on average, in separate estimation procedures (not reported) there is no evidence that the marginal effect of attitude differs by race or gender. Further, while controls for birth-order have significant level effects, there is no evidence that the marginal effect of attitude differs by birth-order.

3.3 *Poor attitude and subsequent labor-market status*

To identify any relationship between attitude upon exiting high school and subsequent labor-market status, I look at both the likelihood that an individual is working for pay and, separately, at the likelihood that an individual is unemployed, conditional on labor force participation. Both measures are available in the 1986 follow-up survey, when survey participants are directly questioned regarding their activities during the first week of February. Respondents who answer that they were not working for pay are then given a series of follow-up questions that reveal their true unemployment status. Considering the likelihood of working for pay, I estimate the following Logit model:

$$(3) \quad \text{Prob}(W_i = 1) = \Phi(\alpha_0 + \alpha_1 \ln(1 + \text{Attitude}_i^{jk}) + \beta' X_i + e_i) \quad ,$$

¹⁹ For example, the correlation coefficients range from .08 to .25, suggesting that there are, indeed, substantial changes in attitude and esteem, as measured by these indices. Intermediate indices are generally lower than the pre-labor-market equivalent.

where W_i indicates if the respondent was working for pay fourteen years following high-school (1986), X_i is a vector of controls and Φ is a logistic cumulative distribution function.

Across the menu of attitude measures used, the results of estimating Eq. (3) clearly suggest that the likelihood of working for pay fourteen years following high-school graduation is significantly lower for those revealing poor attitudes in high school controlling for, among other characteristics, gender, race, ability, marital status and educational attainment. Comparing the medians of the lower and upper quartiles of the attitude indices suggests that those with poor attitude or esteem are between 3 and 5 percent less likely to be working for pay.²⁰ With one exception, these results are again robust to both high-school fixed effects and to the inclusion of the control for attitude in intermediate years taken from the 1979 follow-up survey.²¹

Of the 6,533 respondents above, 5,290 were working for pay in February 1986. However, not all of the remaining 1,243 were active labor-market participants. In follow-up survey questions, 230 respondents clearly revealed themselves to be in the labor market, either actively seeking work or awaiting recall. While there is a negative relationship between poor attitude and labor-force participation, estimating a sample-selection mechanism to account for this in the unemployment equation does not lead to significantly different results – the selection mechanism is rejected by the data. Thus, I estimate the following Logit model of the likelihood of being unemployed for the sample of 5,520 for which this information is certain:

$$(4) \quad \text{Prob}(U_i = 1) = \Phi(\alpha_0 + \alpha_1 \ln(1 + \text{Attitude}_i^{jk}) + \beta' X_i + e_i) \quad ,$$

where U_i indicates if the respondent was unemployed, and X_i is a vector of controls.

²⁰ From columns 1, 3, 5 and 7 of Table 5, the broad-weak attitude measure reveals a difference of 3.5 percent; broad-strong, 3.4 percent; narrow-weak, 5.0 percent; and, narrow-strong, 3.0 percent.

²¹ As the sample size drops considerably due to lack of variation within groups, the fixed-effect results are not reported.

According to the results reported in Table 6, the degree to which respondents reveal a negative pre-labor-market attitude is strongly correlated with their likelihood of being unemployed later in life. Across all attitude indices, where one has a poor attitude, one is more likely to be unemployed fourteen years out. In fact, movement from the median of the lower quartile to the median of the upper quartile increases the likelihood of being unemployed by between 31.6 to 54.3 percent – equivalent to roughly half of the relative increases predicted for black individuals which range from 76 to 86 percent.²² While there are significant differences across race and gender in employment status on average, in separate estimation procedures (not reported) there is no evidence that the marginal effect of attitude differs by race or gender.

3.4 Attitude and wages

Of the 5,290 respondents working for pay at the time of the 1986 survey, 84 percent also report their weekly wages through follow-up questions. While the results are robust to using the sample of these 4,454 respondents, in an attempt to limit the influence of potential measurement error, I report the results only for a sub-sample of weekly wages falling strictly between the first and ninety-ninth percentile, excluding “unreasonably” small and large reported wages.²³ No loss of significance or switching of sign occurs in any estimated coefficient where the full sample is considered. To the contrary, significance is gained by using the full sample. Consider, then, the following wage equation for this sub-sample of 4,382 respondents:

$$(5) \quad \ln(S_i) = \alpha_0 + \alpha_1 \ln(1 + Attitude_i^{jk}) + \beta' X_i + e_i \quad ,$$

²² From columns 1, 3, 5 and 7 of Table 6, movement in the broad-weak attitude measure reveals a difference of 47.0 percent; wide-strong, 31.6 percent; narrow-weak, 47.8 percent; and, narrow-strong, 54.3 percent. These results are also robust to controlling for unobserved heterogeneity at the school level. However, as the sample size drops considerably due to lack of variation within groups, results are not reported.

²³ 47 observations fall below the first percentile, with minimum weekly earnings of \$0.50, mean weekly earnings of \$45.97 and maximum weekly earnings of \$100.10. 46 observations fall above the ninety-ninth percentile, with minimum weekly earnings of \$1,442.31, mean weekly earnings of \$207,637.90 and maximum weekly earnings of \$2,016,000.00. As these extreme values seem implausible, it is likely that this conservative approach will yield more reasonable estimates.

where S_i is the respondent's weekly wage and X_i is a vector of controls.

Before turning to the results, note that poor attitude has previously been associated with a higher likelihood of joblessness and, as such, controlling for the selection bias in the wage equation may yield qualitatively different results. In short, this does not appear to be the case. While there is a negative relationship between poor attitude and working for pay (Section 3.3), estimating a selection mechanism to account for this in the estimation of weekly wages is rejected by the data when a narrow definition of poor attitude is adopted. While the selection mechanism is not rejected for broad definitions, the Heckman procedure yields only slightly more negative estimated coefficients on this variable of concern and I report the more conservative estimates.

Estimating Eq. (5) across attitude indices suggests that respondents who reveal attitude deficiencies in high school do earn significantly less fourteen years later, conditional on employment. As reported in Column 1 of Table 7, controlling for, among other characteristics, gender, race, ability, educational attainment, tenure, age, and marital status, and participation in high-school athletics, a person at the median of the upper quartile of the “*broad definition – at-least-weak position*” index receives weekly wages 4.5 percent lower than those received by a person at the median of the lower quartile.²⁴ Adopting a narrow definition of attitude, as in Column 7, the same predicted difference is 6.8 percent.²⁵

As earlier addressed, controls for height are not available. However, the Persico, Postlewaite and Silverman (2002) result that the height wage premium is insignificant when one controls for esteem is encouraging in this regard. These results are again robust to controlling for unobserved heterogeneity that is specific to the respondent's high school. To allow for the

²⁴ The corresponding predicted weekly wages are \$420.12 at the median of the lower quartile and \$401.36 at the median of the upper quartile.

²⁵ The corresponding predicted weekly wages are \$425.20 at the median of the lower quartile and \$396.17 at the median of the upper quartile.

possibility that the effect of attitude differs by race or gender, I estimate Eq. (5) with the additional interactions (not reported) and find no such difference. Nor are there significant level effects associated with birth-order in the data. While there are significant differences across gender in weekly wages on average, in separate estimation procedures there is also no evidence that the marginal effect of attitude differs by gender, race or birth-order.

While these results suggest that attitude in one's youth matters with respect to eventual earnings potential, note that there are two important caveats that should keep one from interpreting these results too broadly. First, attitude seven years following high school is, in general, more closely associated with earnings fourteen years following high school than is the pre-labor-market measure. Second, while point estimates remain negative, estimates based on the "*broad definition – strong position*" attitude composite, reported in columns 4 through 6, are insignificant.²⁶

3.5 *Attitude and job characteristics*

Beyond those considered above, there are other measurable outcomes that one might also expect to depend on attitude and esteem. Specifically, contingent on employment, it is interesting to consider the type of work done by the individual and whether there is any discernible relationship between earlier attitude and these activities. Of the 5,290 respondents working for pay in February 1986, 4,922 provide responses to survey questions regarding the time they spend on four different categories of activities in an average work day.²⁷ Further, 5,076 respondents provide responses to a question regarding the supervision they are under and the discretion they are given in their position.

²⁶ Directly controlling for change in attitude between 1972 and 1979 suggests that under the narrow definitions of attitude, the extent to which attitude "improves" over the seven years is associated with higher weekly wages in 1986.

²⁷ These categories are as follows: "Working with things (machinery, apparatus, art materials, etc.)," "Doing paperwork (administration, clerical, computational, etc.)," "Working with ideas and thinking," and "Dealing with people (as part of the job)."

Considering these responses in turn, note that in both cases, responses are ordinal. For example, when asked about the time spent on different activities in an average work day, possible responses are ordered as “None,” “Very little,” “Some,” or “A great deal.” When respondents were asked to think about their supervisor or the person who had most control over what they did on the job, the ordinal response is according to how closely they were supervised: “There was no such person,” “I was more or less my own boss within the general policies of the organization,” “My supervisor gave me some freedom in deciding what I did and how I did it,” “My supervisor decided what I did, but I decided how I did it,” and “My supervisor decided both what I did and how I did it.” Given the nature of these responses, it is appropriate for one to estimate a series of ordered-Logit models.²⁸

These estimation results are reported in tables 8 and 9 and, together, clearly indicate that the attitude and esteem measure constructed in this analysis is picking up individual attributes that, later in life, expose the individual to more than just lower employment rates (Table 5), higher unemployment rates (Table 6), and lower earnings (Table 7). However, caution is always warranted when interpreting coefficients from models of ordered dependent variables.²⁹

Relying, then, on the latent propensities, the results reported in Table 8 reveal a significant tendency for those with poor attitude or esteem in high school to spend more time “working with things” than in any other category of activity, even when the intermediate attitude measures are included among the controls, which also include such characteristics as gender, race, ability and

²⁸ Multinomial Logit would not be an efficient method of estimation as the information provided by the ordinal ranking of the dependent variable would not be taken into account. Further, ordinary least squares would impose too much structure on the dependent variable. That is, we would not want to impose that the difference between a dependent variable of “1” and “2” be equivalent to the difference between a “4” and “5,” for example, which would be the case if OLS were adopted.

²⁹ Recall that it is only for the categories corresponding to the lowest and highest values of the dependent variable for which an estimated coefficient unambiguously determines the direction of change from a change in an independent variable. As such, for all interior categories, the sign of the effect of any independent variable on the probability of a particular outcome is ambiguous and must be determined by numerical methods. Here, we discuss the effect of right-hand-side variables on the latent propensities. See Greene (2003) for further discussion of these issues.

job-tenure. From the estimated coefficients from Column 1 of Table 8, moving from the median of the lower quartile of the “*broad definition – at-least-weak position*” index to the median of the upper quartile increases the probability of responding that one “works with *things* a great deal” by 9.7 percent.³⁰ On the other hand, this same movement decreases the probability of responding that one “works with *people* a great deal” by 5 percent (Column 7).³¹ Over the same range, the probability of responding that one spends “no time working with things” decreases by 13 percent and the probability of responding that one spends no time working with people increases by 26.1 percent.³² These individuals clearly exhibit a latent propensity to spend less time doing administrative, clerical or computational paperwork, and less time working “with ideas” and “thinking.” Having previously demonstrated a negative relationship between poor attitude and wages (Section 3.4), it is interesting to note here that in separate estimations (not reported) there is no evidence that those with poor attitudes suffer incrementally lower wages where they are “miss-matched” into positions where they spend most of their time working with people, paper, or ideas.

Adopting the same set of controls, there is also a significant tendency for these individuals to be more closely supervised on the job and to have less discretion in their activities. For example, from the estimated coefficients from Column 2 of Table 9 that also control for an intermediate measure of attitude and esteem, movement from the median of the lower quartile to the median of the upper quartile of the pre-labor-market “*broad definition – at-least-weak position*” index increases the probability of responding that one’s supervisor decided “both what

³⁰ The corresponding probabilities are 38.1 percent at the median of the lower quartile and 41.8 percent at the median of the upper quartile.

³¹ The corresponding probabilities are 78.0 percent at the median of the lower quartile and 74.1 percent at the median of the upper quartile.

³² The probability of responding that one spends no time working with things is 16.2 percent at the median of the lower quartile and 14.1 percent at the median of the upper quartile. The probability of responding that one spends no time working with people is 1.4 percent at the median of the lower quartile and 1.7 percent at the median of the upper quartile.

[one] did and how [one] did it” by 14.6 percent.³³ Over the same range, the probability of responding that there was “no such person” supervising the individual decreases by 12.5 percent.³⁴ In short, where attitude and esteem are poor in high school, individuals are subsequently given less discretion and are under closer supervision in their place of employment. As in the wage equations (Section 3.4), separate estimations (not reported) reveal no significant difference across race or gender in the effect of attitude on the degree of supervision under which the individual works.

3.6 Attitude and job satisfaction

In the preceding analysis, attitude and esteem in youth are shown to have important economic implications long after the time that they are directly observable to others. Last, I consider the implications of attitude and esteem as youth on future job satisfaction. Of the 5,290 respondents working for pay 1986, 5,103 provide responses to questions regarding their level of job satisfaction. As in the previous section, to the twelve categories of job satisfaction, respondents provided an ordinal response: “Very satisfied,” “Satisfied,” “No opinion,” “Dissatisfied” and, “Very dissatisfied.” It is likewise appropriate to estimate another series of ordered-Logit models.

While explaining a subjective response (i.e. satisfaction) by another subjective variable (i.e. attitude and self-esteem) may be more the expertise of sociologists and psychologists, in light of previous evidence, it is interesting to consider that these individuals are also more likely to report being “dissatisfied” or “very dissatisfied” with their jobs. In ten of the twelve attributes of the job-satisfaction series of questions, those who reveal negative attitudes or low self-esteem in high school are more likely to be dissatisfied with respect to their employment situation fourteen

³³ The corresponding probabilities are 4.8 percent at the median of the lower quartile and 5.5 percent at the median of the upper quartile.

³⁴ The corresponding probabilities are 8.0 percent at the median of the lower quartile and 7.0 percent at the median of the upper quartile.

years later.³⁵ As the results are generally robust across all attitude indices, Table 10 reports these results only for the “*broad definition – strong position*” index. Across all four alternative indices, Table 11 reports the estimation results predicting one’s overall satisfaction with the job “as a whole.” Once again it is evident that attitude and esteem in high school matter. From Column 2 of Table 11, where controls for attitude and esteem in intermediate years are included, the probability of responding that one is “very dissatisfied” with their job as a whole increases by 15 percent over the movement from the median of the lower quartile of “*broad definition – at-least-weak position*” index to the median of the upper quartile.³⁶ Using what may be thought of as the most conservative index – the “*narrow definition – strong position*” index of Column 8 – those who earlier revealed poor attitude and esteem are 20 percent more likely to report such dissatisfaction.³⁷

4. Discussion and Conclusion

In this paper, I assess the role of attitude and self-esteem in explaining observed heterogeneity in a sample of high-school graduates and demonstrate important economic implications of poor attitude and esteem in youth. Using data from the National Longitudinal Study of the High School Class of 1972, I find that pre-labor-market attitude and esteem are significant in influencing educational attainment, employment status and wages. To the extent that graduating high-school students exhibit poor attitude or esteem, they attain fewer years of post-secondary education relative to their high-school cohorts, are less likely to be employed for pay fourteen years following graduation, are more likely to be unemployed conditional on labor force participation and, where working for pay, realize lower earnings, on average. Further, they

³⁵ I also control for weekly wages, where available, as this has been shown to be a significant contributing factor in job satisfaction. For recent work related to job satisfaction see, for example, Heywood and Wei (2003).

³⁶ The corresponding probabilities are 2.0 percent at the median of the lower quartile and 2.3 percent at the median of the upper quartile.

³⁷ The corresponding probabilities are 2.1 percent at the median of the lower quartile and 2.5 percent at the median of the upper quartile.

tend to be given less discretion and be under closer supervision at work and are more dissatisfied with their working conditions and employment situations.

In each case above, a pre-labor-market measure of attitude and esteem is significant in explaining observed heterogeneity in future education and labor-market outcomes, and, consistent with attitude in high-school having human capital effects, the significance of this early measure largely remains when one controls for later measures of attitude and esteem. In short, the consequence of early attitude and esteem issues are apparently long lived.³⁸ However, as the later attitude measure is itself often significant, one cannot rule out that corrective action may positively influence labor-market outcomes later in life. In some sense, while long-lived, the damaging effects of negative attitude and esteem in high school are reversible.

Recall that a composite index of survey responses to the Attitudes and Opinions portion of the NLS-72 is created in this paper. This series of questions asked respondents how they felt about subjective statements such as “I take a positive attitude toward myself,” and “I feel I am a person of worth, on an equal plane with others,” and the importance of “Being successful in [their] line of work.” While I report results across four alternative indices, varying both the question-content of the index and the intensity of survey responses necessary for the index to register the response as indicative of poor attitude, the inherent difficulty in quantifying such non-cognitive attributes must be acknowledged. To the extent that these composite indices are noisy measures of true attitude and esteem, however, the relationships reported here are all the more noteworthy. At the very least, evidence is provided that suggests those who systematically separate themselves from others by their responses to these questions suffer with respect to

³⁸ This may also be viewed in the spirit of what Persico, Postlewaite and Silverman (2002) refer to as “early social discrimination rather than contemporaneous market discrimination” being at the root of the disparities in these outcomes.

education and labor-market outcomes later in life, while controlling for the usual collection of other contributing factors.

With that said, consider that thirty-eight students and eighteen adults were killed and 108 were injured in school shootings between January, 1993, and the end of 2002.³⁹ While reports of violent acts high-school campuses are declining, many are still attempting to “reach out to troubled children quickly and effectively,” as prescribed by *Early Warning, Timely Response: A Guide to Safe Schools*, the U.S. Department of Education and the Department of Justice joint effort to develop an early warning guide to help adults. Among the potential “warning signs” included in this guide are “social withdrawal,” “excessive feelings of isolation and being alone,” and “excessive feelings of rejection” – signs not unlike those analyzed here. By considering the relationship between “early warning signs” and future labor-market outcomes, this paper suggests that real economic consequence may exist in the targeting of resources toward individuals who reveal these traits. In fact, as most students advance through school without experiencing violence, the benefits of such policies may lie largely in individuals’ subsequent labor-market experiences.

³⁹ Data made available by the Ribbon of Promise National Campaign to End School Violence.

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Table 1: NLS-72 1972 Attitude and Opinions, proportional breakdown of responses.

Survey Question	Proportional Breakdown of Responses			
	Very Important	Somewhat Important	Not Important	
BQ20. How important is each of the following to you in your life?				
A: Being successful in my line of work.	.850	.141	.010	
B: Finding the right person to marry and having a happy family life.	.833	.128	.040	
C: Having lots of money.	.150	.613	.237	
D: Having strong friendships.	.815	.171	.014	
E: Being able to find steady work.	.766	.209	.025	
F: Being a leader in my community	.119	.448	.434	
G: Being able to give my children better opportunities than I've had	.642	.288	.070	
H: Living close to parents and relatives	.070	.428	.502	
I: Getting away from this area of the country	.126	.267	.607	
J: Working to correct social and economic inequalities	.276	.528	.196	
BQ21. How do you feel about each of the following statements?	Agree Strongly^a	Agree	Disagree	Disagree Strongly
A: I take a positive attitude toward myself.	.254	.538	.017	.085
B: Good luck is more important than hard work for success	.012	.055	.418	.040
C: I feel I am a person of worth, on an equal plane with others.	.314	.570	.010	.058
D: I am able to do things as well as most other people.	.265	.624	.006	.038
E: Every time I try to get ahead, something or somebody stops me.	.033	.123	.170	.069
F: Planning only makes a person unhappy since hardly ever work out anyway.	.038	.112	.309	.052
G: People who accept their condition in life are happier than those who try to change things	.087	.192	.237	.076
H: On the whole, I'm satisfied with myself.	.174	.537	.033	.064
BQ17. How much has each of the following interfered with your education at this school?	Not At All	Somewhat	A Great Deal	
G: Don't feel part of the school.	.663	.255	.082	

^a "No Opinion" is the excluded from the table and constitutes the remainder.

Table 2: Attitude index definitions and descriptive statistics

Descriptive statistics are for the sample of 6,533 observations in Table 3.

Poor-Attitude Index	Mean (stddev)	Proportion non-zero	Maximum Observed	Maximum Possible
<i>Broad definition – at-least-weak positions.</i>	4.143 (2.08)	.987	13	16
Sum of:				
<ul style="list-style-type: none"> • “Not important” and “Somewhat important” positions on the following questions: BQ20a, BQ20b, BQ20d, BQ20e, BQ20f, BQ20g, and BQ20j. • “Disagree strongly” and “Disagree” positions on the following questions: BQ21a, BQ21b, BQ21c, BQ21d, BQ21h. • “Agree strongly” and “Agree” positions on the following questions: BQ21e, BQ21f, BQ21g. • “Somewhat” and “A great deal” positions on the following questions: BQ17g. 				
<i>Broad definition – strong positions.</i>	1.102 (1.19)	.633	11	16
Sum of:				
<ul style="list-style-type: none"> • “Not important” positions on the following questions: BQ20a, BQ20b, BQ20d, BQ20e, BQ20f, BQ20g, and BQ20j. • “Disagree strongly” positions on the following questions: BQ21a, BQ21b, BQ21c, BQ21d, BQ20h. • “Agree strongly” positions on the following questions: BQ21e, BQ21f, BQ21g. • “A great deal” positions on the following questions: BQ17g. 				
<i>Narrow definition – at-least-weak positions.</i>	1.012 (1.03)	.617	5	4
Sum of:				
<ul style="list-style-type: none"> • “Not important” and “Somewhat important” positions on the following questions: BQ20a, BQ20e. • “Disagree strongly” and “Disagree” positions on the following questions: BQ21a. • “Somewhat” and “A great deal” positions on the following questions: BQ17g. 				
<i>Narrow definition – strong positions.</i>	0.174 (0.45)	.150	4	4
Sum of:				
<ul style="list-style-type: none"> • “Not important” positions on the following questions: BQ20a, BQ20e. • “Disagree strongly” positions on the following questions: BQ21a. • “A great deal” positions on the following questions: BQ17g. 				

Table 3: The effect of poor attitude in high school (1972) on percentile high school rank (1972).

The dependent variable is Log[respondent's percentile rank in high-school]. The within-sample, mean percentile-rank is 55.97.

Independent variable	Broad Attitude Index				Narrow Attitude Index			
	At-least-weak positions		Strong positions		At-least-weak positions		Strong positions	
	OLS ^a	Control for school-specific unobserved heterogeneity	OLS ^a	Control for school-specific unobserved heterogeneity	OLS ^a	Control for school-specific unobserved heterogeneity	OLS ^a	Control for school-specific unobserved heterogeneity
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln[1 + Attitude index]	-0.136 (7.92)***	-0.112 (6.31)***	-0.106 (7.10)***	-0.097 (6.52)***	-0.104 (6.74)***	-0.073 (4.77)***	-0.151 (4.93)***	-0.118 (4.27)***
Male	-0.186 (10.97)***	-0.198 (12.45)***	-0.185 (10.85)***	-0.196 (12.36)***	-0.192 (11.33)***	-0.202 (12.70)***	-0.185 (10.88)***	-0.196 (12.29)***
Race: Black	0.204 (4.79)***	-0.014 (0.33)	0.207 (4.91)***	-0.009 (0.21)	0.211 (5.01)***	-0.005 (0.13)	0.220 (5.23)***	-0.001 (0.02)
Race: Other	0.049 (1.24)	-0.101 (3.01)***	0.050 (1.26)	-0.102 (3.05)***	0.049 (1.24)	-0.103 (3.05)***	0.052 (1.31)	-0.101 (2.99)***
Log of Cognitive ability test	0.333 (5.93)***	0.319 (6.10)***	0.336 (6.01)***	0.321 (6.13)***	0.331 (5.94)***	0.322 (6.13)***	0.334 (5.97)***	0.323 (6.15)***
Aptitude: High	0.349 (21.91)***	0.398 (22.35)***	0.348 (22.01)***	0.398 (22.33)***	0.357 (22.32)***	0.403 (22.61)***	0.351 (22.12)***	0.400 (22.41)***
Aptitude: Low	-0.332 (10.24)***	-0.379 (16.09)***	-0.337 (10.37)***	-0.382 (16.23)***	-0.340 (10.47)***	-0.386 (16.37)***	-0.340 (10.44)***	-0.386 (16.38)***
Parent education: High school	0.007 (0.25)	0.049 (2.02)**	0.011 (0.41)	0.053 (2.18)**	0.006 (0.22)	0.048 (1.98)**	0.008 (0.29)	0.051 (2.12)**
Parent education: Some college	0.013 (0.43)	0.086 (3.17)***	0.015 (0.50)	0.087 (3.22)***	0.015 (0.50)	0.086 (3.18)***	0.012 (0.39)	0.086 (3.18)***
Parent education: College	0.052 (1.67)*	0.144 (4.65)***	0.054 (1.71)*	0.144 (4.66)***	0.051 (1.63)	0.143 (4.59)***	0.048 (1.55)	0.144 (4.63)***
Parent education: Graduate degree	0.002 (0.07)	0.078 (2.47)**	0.006 (0.18)	0.080 (2.55)**	0.006 (0.20)	0.080 (2.54)**	0.005 (0.16)	0.082 (2.59)***
Resided in central city in year of graduation	0.024 (1.11)	-0.038 (1.53)	0.026 (1.21)	-0.036 (1.43)	0.027 (1.26)	-0.036 (1.44)	0.026 (1.23)	-0.036 (1.41)
Active participant in high-school athletics	0.050 (3.10)***	0.063 (3.92)***	0.051 (3.16)***	0.062 (3.85)***	0.054 (3.31)***	0.068 (4.20)***	0.059 (3.67)***	0.070 (4.39)***
Missing athletic participation	0.067 (0.52)	-0.001 (0.01)	0.052 (0.40)	-0.011 (0.08)	0.073 (0.57)	0.004 (0.03)	0.054 (0.43)	-0.012 (0.10)
Constant	2.878 (12.78)***	2.874 (13.62)***	2.717 (12.14)***	2.750 (13.19)***	2.734 (12.26)***	2.730 (13.06)***	2.675 (11.94)***	2.691 (12.90)***
R ²	0.19	0.24	0.18	0.25	0.18	0.24	0.18	0.24
Observations / Groups	6533	6533 / 904	6533	6533 / 904	6533	6533 / 904	6533	6533 / 904

Absolute values of *t*-statistics are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

^a Errors are assumed to be independent across observations from different high schools but not necessarily across observations within each high school.

Table 4: The effect of poor attitude in high school (1972) on years of formal education (1986).

The dependent variable is Log[respondents years of education beyond high school]. The within-sample mean number of years beyond high school is 2.9 years.

Independent variable	Broad Attitude Index						Narrow Attitude Index					
	At-least-weak positions			Strong positions			At-least-weak positions			Strong positions		
	OLS ^a	Control for school-specific unobserved heterogeneity	Control for intermediate measure of attitude	OLS ^a	Control for school-specific unobserved heterogeneity	Control for intermediate measure of attitude ^b	OLS ^a	Control for school-specific unobserved heterogeneity	Control for intermediate measure of attitude ^b	OLS ^a	Control for school-specific unobserved heterogeneity	Control for intermediate measure of attitude ^b
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Ln[1 + Attitude index], 1972	-0.113 (6.58)***	-0.102 (5.63)***	-0.092 (5.19)***	-0.085 (5.65)***	-0.076 (5.00)***	-0.057 (3.77)***	-0.039 (2.53)**	-0.039 (2.49)**	-0.027 (1.75)*	-0.035 (1.27)	-0.027 (0.97)	-0.028 (1.02)
Ln[1 + Attitude index], 1979			-0.106 (5.26)***			-0.122 (7.87)***			-0.070 (4.25)***			-0.123 (3.54)***
Male	0.118 (8.18)***	0.125 (7.70)***	0.111 (7.74)***	0.119 (8.24)***	0.126 (7.77)***	0.113 (7.86)***	0.115 (7.96)***	0.124 (7.56)***	0.107 (7.29)***	0.118 (8.17)***	0.127 (7.76)***	0.113 (7.78)***
Race: Black	0.326 (9.17)***	0.290 (6.99)***	0.325 (9.16)***	0.330 (9.25)***	0.294 (7.11)***	0.321 (8.97)***	0.334 (9.27)***	0.297 (7.16)***	0.328 (9.14)***	0.336 (9.30)***	0.298 (7.17)***	0.334 (9.29)***
Race: Other	0.068 (2.36)**	0.023 (0.68)	0.066 (2.32)**	0.068 (2.40)**	0.021 (0.63)	0.062 (2.18)**	0.067 (2.32)**	0.020 (0.60)	0.064 (2.22)**	0.067 (2.32)**	0.020 (0.57)	0.069 (2.37)**
Log of Cognitive ability test	0.085 (2.00)**	0.149 (2.81)***	0.080 (1.90)*	0.087 (2.04)**	0.152 (2.85)***	0.083 (1.95)*	0.087 (2.03)**	0.153 (2.88)***	0.083 (1.94)*	0.089 (2.08)**	0.156 (2.92)***	0.086 (2.02)**
Aptitude: High	0.338 (19.03)***	0.283 (15.05)***	0.344 (19.33)***	0.337 (19.00)***	0.283 (15.03)***	0.343 (19.39)***	0.341 (19.06)***	0.285 (15.11)***	0.344 (19.24)***	0.338 (18.98)***	0.283 (15.00)***	0.338 (19.02)***
Aptitude: Low	-0.303 (12.93)***	-0.259 (10.62)***	-0.299 (12.75)***	-0.307 (13.10)***	-0.263 (10.75)***	-0.304 (13.07)***	-0.309 (13.14)***	-0.265 (10.82)***	-0.311 (13.22)***	-0.309 (13.13)***	-0.265 (10.83)***	-0.306 (13.04)***
Ln[Percentile rank in class]	0.169 (12.73)***	0.210 (15.56)***	0.168 (12.64)***	0.170 (12.78)***	0.210 (15.58)***	0.168 (12.65)***	0.174 (13.02)***	0.214 (15.85)***	0.172 (12.87)***	0.175 (13.14)***	0.215 (15.95)***	0.173 (12.91)***
Parent education: High school	0.120 (4.67)***	0.117 (4.79)***	0.118 (4.60)***	0.123 (4.79)***	0.120 (4.92)***	0.123 (4.77)***	0.119 (4.61)***	0.117 (4.77)***	0.117 (4.54)***	0.119 (4.61)***	0.118 (4.81)***	0.117 (4.53)***
Parent education: Some college	0.335 (12.49)***	0.313 (11.44)***	0.331 (12.31)***	0.336 (12.49)***	0.314 (11.47)***	0.331 (12.31)***	0.334 (12.43)***	0.313 (11.41)***	0.330 (12.25)***	0.332 (12.35)***	0.313 (11.40)***	0.330 (12.29)***
Parent education: College	0.449 (15.10)***	0.397 (12.64)***	0.447 (15.06)***	0.450 (15.15)***	0.397 (12.63)***	0.447 (15.06)***	0.445 (14.94)***	0.396 (12.57)***	0.443 (14.84)***	0.443 (14.88)***	0.396 (12.58)***	0.442 (14.84)***
Parent education: Graduate degree	0.517 (17.27)***	0.434 (13.57)***	0.515 (17.18)***	0.520 (17.27)***	0.437 (13.63)***	0.516 (17.16)***	0.517 (17.24)***	0.436 (13.60)***	0.515 (17.11)***	0.516 (17.13)***	0.437 (13.61)***	0.515 (17.10)***
Participant in athletics	0.126 (8.24)***	0.133 (8.16)***	0.126 (8.24)***	0.127 (8.25)***	0.134 (8.18)***	0.122 (7.92)***	0.134 (8.72)***	0.140 (8.56)***	0.133 (8.69)***	0.137 (8.93)***	0.143 (8.76)***	0.136 (8.89)***
Missing athletic participation ^b	0.010 (0.08)	0.047 (0.36)	0.005 (0.04)	-0.002 (0.02)	0.039 (0.29)	-0.019 (0.15)	0.005 (0.04)	0.046 (0.35)	-0.003 (0.03)	-0.002 (0.02)	0.037 (0.28)	-0.003 (0.03)
Only child in family	0.177 (4.94)***	0.172 (4.21)***	0.174 (4.84)***	0.177 (4.96)***	0.169 (4.14)***	0.176 (4.93)***	0.179 (5.00)***	0.171 (4.19)***	0.177 (4.95)***	0.178 (4.98)***	0.171 (4.18)***	0.178 (4.98)***
Youngest child in family	0.098 (4.93)***	0.095 (4.65)***	0.096 (4.83)***	0.098 (4.96)***	0.095 (4.65)***	0.098 (4.95)***	0.100 (5.03)***	0.097 (4.72)***	0.098 (4.89)***	0.100 (5.01)***	0.097 (4.70)***	0.098 (4.93)***
Oldest child in family	0.033 (1.76)*	0.039 (1.99)**	0.034 (1.85)*	0.033 (1.77)*	0.039 (1.99)**	0.035 (1.90)*	0.033 (1.81)*	0.040 (2.04)**	0.035 (1.88)*	0.034 (1.82)*	0.041 (2.07)**	0.035 (1.88)*
Missing 1979 Attitude Index ^b			-0.049 (1.47)			-0.048 (1.44)			-0.046 (1.39)			-0.047 (1.42)
Constant	-0.274 (1.55)	-0.679 (3.13)***	-0.125 (0.71)	-0.414 (2.37)**	-0.804 (3.76)***	-0.313 (1.80)*	-0.459 (2.62)***	-0.850 (3.96)***	-0.405 (2.30)**	-0.493 (2.83)***	-0.887 (4.14)***	-0.459 (2.62)***
R ²	0.33	0.30	0.33	0.32	0.29	0.33	0.32	0.29	0.32	0.32	0.29	0.32
Observations / Groups	6533	6533 / 904	6533 / 904	6533	6533 / 904	6533 / 904	6533	6533 / 904	6533 / 904	6533	6533 / 904	6533 / 904

Absolute values of *t*-statistics are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Results are robust to using educational attainment as of 1979 as an alternative dependent variable and to the inclusion of controls for high-school quality/resources such as faculty-to-student ratios and the number of library books per student.

^a Errors are assumed to be independent across observations from different high schools but not necessarily across observations within each high school.

^b Results are robust to dropping observations with missing variables.

Table 5: The effect of poor attitude in high school (1972) on subsequent work status (1986).

The binary dependent variable equals one if the respondent reports working for pay at the time of the 1986 follow-up survey, and is otherwise equal to zero. The within-sample mean of the dependent variable is 80.98 percent.

Independent variable	Working for Pay							
	Broad Attitude Index				Narrow Attitude Index			
	At-least-weak positions		Strong positions		At-least-weak positions		Strong positions	
	Logit	Control for intermediate measure of attitude	Logit	Control for intermediate measure of attitude	Logit	Control for intermediate measure of attitude	Logit	Control for intermediate measure of attitude
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Ln[1+Attitude index], 1972	-0.203 (2.42)**	-0.150 (1.74)*	-0.181 (2.68)***	-0.152 (2.20)**	-0.268 (3.88)***	-0.210 (2.98)***	-0.236 (1.96)**	-0.192 (1.59)
Ln[1+Attitude index], 1979		-0.272 (2.65)***		-0.140 (1.87)*		-0.373 (5.23)***		-0.767 (5.87)***
Male	1.436 (18.07)***	1.423 (17.96)***	1.439 (18.10)***	1.435 (18.03)***	1.420 (17.86)***	1.377 (17.32)***	1.439 (18.12)***	1.406 (17.64)***
Race: Black	0.316 (2.27)**	0.315 (2.24)**	0.318 (2.28)**	0.315 (2.25)**	0.316 (2.27)**	0.272 (1.93)*	0.336 (2.41)**	0.314 (2.23)**
Race: Other	-0.037 (0.29)	-0.038 (0.30)	-0.037 (0.30)	-0.041 (0.33)	-0.039 (0.31)	-0.052 (0.42)	-0.034 (0.27)	-0.022 (0.18)
Log of Cognitive ability test	0.339 (1.81)*	0.328 (1.75)*	0.336 (1.79)*	0.333 (1.78)*	0.324 (1.73)*	0.304 (1.62)	0.334 (1.79)*	0.314 (1.68)*
Aptitude: High	-0.043 (0.55)	-0.025 (0.31)	-0.045 (0.57)	-0.035 (0.45)	-0.026 (0.33)	0.002 (0.03)	-0.046 (0.59)	-0.030 (0.38)
Aptitude: Low	-0.163 (1.65)*	-0.154 (1.54)	-0.170 (1.72)*	-0.169 (1.70)*	-0.176 (1.79)*	-0.189 (1.91)*	-0.171 (1.73)*	-0.160 (1.61)
Ln[Percentile rank in class]	0.082 (1.54)	0.084 (1.56)	0.083 (1.56)	0.081 (1.51)	0.076 (1.43)	0.073 (1.36)	0.088 (1.64)	0.076 (1.42)
Ln[1+Yrs of educ beyond high school, 1986]	0.258 (5.00)***	0.247 (4.75)***	0.258 (5.01)***	0.247 (4.74)***	0.264 (5.13)***	0.244 (4.68)***	0.268 (5.22)***	0.250 (4.83)***
Married, 1986	0.444 (2.02)**	0.445 (2.03)**	0.455 (2.08)**	0.459 (2.10)**	0.464 (2.12)**	0.472 (2.15)**	0.454 (2.08)**	0.461 (2.12)**
Male * Married	-0.540 (1.10)	-0.557 (1.13)	-0.540 (1.09)	-0.548 (1.11)	-0.549 (1.12)	-0.568 (1.15)	-0.536 (1.09)	-0.587 (1.19)
Resided in central city, 1986	0.023 (0.29)	0.020 (0.25)	0.029 (0.36)	0.032 (0.39)	0.028 (0.35)	0.027 (0.33)	0.027 (0.33)	0.028 (0.34)
Missing 1979 Attitude Index ^a		-0.118 (0.76)		-0.116 (0.75)		-0.123 (0.80)		-0.128 (0.84)
Constant	-0.655 (0.85)	-0.268 (0.35)	-0.852 (1.13)	-0.738 (0.97)	-0.733 (0.97)	-0.458 (0.61)	-0.957 (1.28)	-0.744 (0.99)
	chi2(12) =	chi2(14) =	chi2(12) =	chi2(14) =	chi2(12) =	chi2(14) =	chi2(12) =	chi2(14) =
Observations	392.7 6533	394.7 6533	394.0 6533	393.6 6533	400.9 6533	425.2 6533	392.0 6533	431.0 6533

Absolute values of z-statistics are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Controlling for unobserved heterogeneity at the high-school level yields qualitatively similar results. However, the fixed-effect results are reported only in a supplement, as the sample size drops considerably (to 4907) due to lack of variation within groups. Results are robust to the inclusion of controls for high-school quality/resources such as faculty-to-student ratios and the number of library books per student, and to the inclusion of controls for high-school athletic participation.

^a Results are robust to dropping observations with missing variables.

Table 6: The effect of poor attitude in high school (1972) on subsequent unemployment status (1986).

The binary dependent variable equals one if the respondent is unemployed at the time of the 1986 follow-up survey, and is otherwise equal to zero. The within-sample mean of the dependent variable is 4.17 percent.

Independent variable	Broad Attitude Index				Narrow Attitude Index			
	At-least-weak positions		Strong positions		At-least-weak positions		Strong positions	
	Logit (1)	Control for intermediate measure of attitude (2)	Logit (3)	Control for intermediate measure of attitude (4)	Logit (5)	Control for intermediate measure of attitude (6)	Logit (7)	Control for intermediate measure of attitude (8)
Ln[1+Attitude index], 1972	0.482 (2.59)***	0.436 (2.21)**	0.266 (1.91)*	0.210 (1.47)	0.378 (2.80)***	0.348 (2.46)**	0.670 (3.33)***	0.640 (3.19)***
Ln[1+Attitude index], 1979		0.226 (1.01)		0.275 (1.68)*		0.184 (1.23)		0.443 (1.63)
Male	-0.142 (1.01)	-0.129 (0.91)	-0.144 (1.02)	-0.133 (0.95)	-0.124 (0.88)	-0.102 (0.71)	-0.152 (1.08)	-0.131 (0.94)
Race: Black	0.670 (3.14)***	0.678 (3.14)***	0.657 (3.08)***	0.685 (3.17)***	0.657 (3.08)***	0.678 (3.14)***	0.614 (2.87)***	0.627 (2.92)***
Race: Other	0.312 (1.29)	0.314 (1.30)	0.312 (1.29)	0.325 (1.34)	0.317 (1.31)	0.323 (1.33)	0.304 (1.26)	0.297 (1.23)
Log of Cognitive ability test	-0.687 (2.00)**	-0.682 (1.99)**	-0.702 (2.05)**	-0.694 (2.02)**	-0.677 (1.95)*	-0.677 (1.95)*	-0.675 (1.98)**	-0.670 (1.97)**
Aptitude: High	0.230 (1.24)	0.217 (1.18)	0.232 (1.26)	0.211 (1.14)	0.204 (1.10)	0.190 (1.03)	0.229 (1.25)	0.220 (1.20)
Aptitude: Low	0.238 (1.32)	0.235 (1.31)	0.257 (1.44)	0.259 (1.44)	0.262 (1.47)	0.274 (1.53)	0.258 (1.45)	0.252 (1.41)
Ln[Percentile rank in class]	-0.080 (0.94)	-0.084 (0.96)	-0.089 (1.04)	-0.086 (0.99)	-0.080 (0.93)	-0.082 (0.95)	-0.087 (1.00)	-0.084 (0.95)
Ln[1 + Yrs of education beyond high school, 1986]	-0.551 (5.03)***	-0.544 (4.96)***	-0.561 (5.18)***	-0.543 (5.00)***	-0.569 (5.28)***	-0.562 (5.21)***	-0.569 (5.31)***	-0.566 (5.27)***
Married, 1986	0.690 (2.17)**	0.700 (2.20)**	0.669 (2.11)**	0.665 (2.09)**	0.666 (2.11)**	0.664 (2.10)**	0.678 (2.16)**	0.673 (2.13)**
Male * Married	-1.532 (1.40)	-1.528 (1.40)	-1.546 (1.42)	-1.546 (1.42)	-1.533 (1.40)	-1.529 (1.40)	-1.567 (1.44)	-1.540 (1.41)
Resided in central city 1986	-0.321 (2.01)**	-0.320 (2.00)**	-0.330 (2.07)**	-0.334 (2.09)**	-0.333 (2.09)**	-0.333 (2.09)**	-0.321 (2.02)**	-0.321 (2.01)**
Missing 1979 Attitude Index ^a		-0.048 (0.16)		-0.040 (0.13)		-0.075 (0.25)		-0.047 (0.16)
Constant	-0.488 (0.34)	-0.772 (0.55)	0.215 (0.16)	-0.005 (0.00)	0.024 (0.02)	-0.040 (0.03)	0.186 (0.14)	0.120 (0.09)
	chi2(12) = 392.7	chi2(14) = 394.7	chi2(12) = 394.0	chi2(14) = 393.6	chi2(12) = 400.9	chi2(14) = 425.2	chi2(12) = 392.0	chi2(14) = 431.0
Observations	5520	5520	5520	5520	5520	5520	5520	5520

Absolute values of z-statistics are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Controlling for unobserved heterogeneity at the high-school level yields qualitatively similar results. However, The fixed-effect results are reported only in a supplement, as the sample size drops considerably (to 1353) due to lack of variation within groups. Results are robust to the inclusion of controls for high-school quality/resources such as faculty-to-student ratios and the number of library books per student, and to the inclusion of controls for high-school athletic participation.

^a Results are robust to dropping observations with missing variables.

Table 7: The effect of poor attitude in high school (1972) on subsequent weekly wages (1986).

The dependent variable is Log[respondent's reported weekly earnings]. The within-sample mean of the dependent variable is \$410.98.

Independent variable	Broad Attitude Index						Narrow Attitude Index					
	At-least-weak positions			Strong positions			At-least-weak positions			Strong positions		
	OLS ^a	Control for school-specific unobserved heterogeneity	Control for intermediate measure of attitude	OLS ^a	Control for school-specific unobserved heterogeneity	Control for intermediate measure of attitude	OLS ^a	Control for school-specific unobserved heterogeneity	Control for intermediate measure of attitude	OLS ^a	Control for school-specific unobserved heterogeneity	Control for intermediate measure of attitude
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Ln[1+Attitude index], 1972	-0.049 (2.74)***	-0.046 (2.30)**	-0.033 (1.76)*	-0.022 (1.43)	-0.024 (1.41)	-0.019 (1.17)	-0.059 (3.96)***	-0.065 (3.74)***	-0.039 (2.62)***	-0.061 (2.11)**	-0.066 (2.08)**	-0.049 (1.68)*
Ln[1 + Attitude index], 1979			-0.085 (3.81)***			-0.019 (1.09)			-0.121 (6.82)***			-0.253 (6.03)***
Male	0.482 (28.67)***	0.479 (25.75)***	0.479 (28.38)***	0.482 (28.70)***	0.480 (25.76)***	0.482 (28.65)***	0.479 (28.59)***	0.476 (25.58)***	0.468 (28.09)***	0.483 (28.72)***	0.480 (25.79)***	0.476 (28.12)***
Race: Black	-0.001 (0.03)	-0.015 (0.32)	0.004 (0.12)	0.002 (0.06)	-0.012 (0.26)	0.007 (0.23)	0.001 (0.03)	-0.012 (0.26)	-0.002 (0.07)	0.006 (0.17)	-0.009 (0.19)	0.008 (0.26)
Race: Other	0.081 (2.79)***	0.058 (1.45)	0.080 (2.74)***	0.082 (2.80)***	0.058 (1.44)	0.082 (2.79)***	0.082 (2.81)***	0.060 (1.49)	0.078 (2.70)***	0.083 (2.83)***	0.062 (1.52)	0.087 (2.98)***
Log of Cognitive ability test	0.184 (3.70)***	0.296 (4.87)***	0.181 (3.66)***	0.185 (3.72)***	0.298 (4.89)***	0.186 (3.74)***	0.180 (3.62)***	0.293 (4.83)***	0.175 (3.53)***	0.185 (3.72)***	0.298 (4.91)***	0.181 (3.64)***
Aptitude: High	0.069 (3.68)***	0.048 (2.34)**	0.075 (3.98)***	0.068 (3.63)***	0.048 (2.33)**	0.070 (3.72)***	0.073 (3.88)***	0.052 (2.50)**	0.082 (4.36)***	0.068 (3.63)***	0.048 (2.32)**	0.072 (3.84)***
Aptitude: Low	-0.066 (2.70)***	-0.034 (1.19)	-0.065 (2.63)***	-0.069 (2.78)***	-0.036 (1.25)	-0.068 (2.75)***	-0.068 (2.76)***	-0.035 (1.23)	-0.074 (2.98)***	-0.068 (2.75)***	-0.035 (1.22)	-0.066 (2.69)***
Ln[Percentile rank in class]	0.015 (1.07)	0.035 (2.23)**	0.014 (1.00)	0.016 (1.13)	0.035 (2.25)**	0.013 (0.98)	0.014 (1.02)	0.035 (2.24)**	0.013 (0.97)	0.016 (1.14)	0.035 (2.28)**	0.012 (0.86)
Ln[1+Yrs of education post high school, Tenure at job	0.187 (14.42)***	0.155 (10.86)***	0.184 (13.97)***	0.189 (14.55)***	0.157 (10.96)***	0.187 (14.26)***	0.189 (14.60)***	0.156 (10.91)***	0.183 (14.08)***	0.190 (14.62)***	0.157 (11.03)***	0.186 (14.41)***
Tenure ²	0.079 (5.11)***	0.073 (4.59)***	0.080 (5.15)***	0.080 (5.15)***	0.074 (4.62)***	0.080 (5.13)***	0.080 (5.11)***	0.073 (4.61)***	0.081 (5.23)***	0.080 (5.14)***	0.074 (4.62)***	0.079 (5.09)***
Tenure	-0.005 (2.69)***	-0.003 (1.98)**	-0.005 (2.74)***	-0.005 (2.70)***	-0.003 (2.01)**	-0.005 (2.70)***	-0.005 (2.71)***	-0.004 (2.03)**	-0.005 (2.88)***	-0.005 (2.70)***	-0.004 (2.01)**	-0.004 (2.70)***
Age	-0.089 (0.10)	0.906 (0.87)	-0.059 (0.07)	-0.088 (0.10)	-0.059 (0.85)	-0.096 (0.11)	-0.121 (0.14)	0.898 (0.86)	-0.047 (0.05)	-0.081 (0.09)	0.893 (0.85)	-0.152 (0.18)
Age ²	0.001 (0.05)	-0.015 (0.91)	0.000 (0.02)	0.001 (0.05)	-0.014 (0.89)	0.001 (0.06)	0.001 (0.09)	-0.014 (0.90)	0.000 (0.01)	0.001 (0.04)	-0.014 (0.89)	0.002 (0.13)
Married	0.040 (0.71)	0.007 (0.11)	0.039 (0.71)	0.042 (0.76)	0.011 (0.18)	0.044 (0.79)	0.043 (0.76)	0.010 (0.17)	0.048 (0.88)	0.042 (0.76)	0.011 (0.18)	0.043 (0.78)
Male * Married	-0.056 (0.61)	0.051 (0.50)	-0.062 (0.68)	-0.056 (0.61)	0.047 (0.68)	-0.060 (0.65)	-0.058 (0.63)	0.049 (0.49)	-0.062 (0.69)	-0.054 (0.59)	0.049 (0.49)	-0.065 (0.71)
Resided in central city, 1986	0.035 (1.86)*	-0.002 (0.07)	0.035 (1.87)*	0.036 (1.93)*	-0.001 (0.02)	0.037 (1.96)*	0.036 (1.94)*	-0.003 (0.10)	0.038 (2.07)**	0.036 (1.92)*	-0.000 (0.00)	0.038 (2.02)**
Participant in athletics	0.007 (0.46)	0.020 (1.10)	0.007 (0.47)	0.010 (0.64)	0.022 (1.20)	0.009 (0.56)	0.006 (0.37)	0.018 (0.98)	0.006 (0.42)	0.010 (0.65)	0.023 (1.24)	0.009 (0.59)
Missing athletic participation ^b	-0.006 (0.06)	0.082 (0.56)	-0.023 (0.21)	-0.017 (0.15)	0.076 (0.52)	-0.026 (0.24)	-0.002 (0.02)	0.091 (0.62)	-0.019 (0.17)	-0.019 (0.17)	0.073 (0.49)	-0.016 (0.16)
Missing 1979 Attitude Index ^b			-0.085 (2.52)**			-0.085 (2.50)**			-0.081 (2.40)**			-0.082 (2.42)**
Constant	6.686 (0.48)	-9.988 (0.59)	6.298 (0.45)	6.608 (0.47)	-9.773 (0.57)	6.755 (0.48)	7.195 (0.51)	-9.876 (0.58)	6.060 (0.43)	6.473 (0.46)	-9.854 (0.58)	7.671 (0.55)
R ²	0.29	0.28	0.29	0.29	0.28	0.29	0.29	0.28	0.30	0.29	0.28	0.30
Observations / Groups	4382	4382 / 889	4382 / 889	4382	4382 / 889	4382 / 889	4382	4382 / 889	4382 / 889	4382	4382 / 889	4382 / 889

Absolute values of *t*-statistics are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Results are robust to the inclusion of controls for high-school quality/resources such as faculty-student ratios and the number of library books per student. ^a Errors are assumed to be independent across observations from different high schools but not necessarily across observations within each high school.

^b Results are robust to dropping observations with missing variables.

Table 8: The effect of poor attitude in high school (1972) on subsequent job-type (1986).

Coefficients are from the estimation of ordered-Logit models. Respondents were asked the following question: “The following are some general things that people do on their jobs. About how much time did you spend on each in the average work day at your present or most recent job? Working with things (machinery, apparatus, art materials, etc.). Doing paperwork (administration, clerical, computational, etc.). Working with ideas, thinking. Dealing with people (as part of the job).” Responses are ordered according to the following key: “None” (= 1), “Very little,” “Some,” “A great deal” (= 4).

Independent variable	Degree to which R works with things		Degree to which R does paperwork		Degree to which R works with ideas or thinks		Degree to which R deals with people	
	Broad / At-least-weak (1)	Narrow / At-least-weak (2)	Broad / At-least-weak (3)	Narrow / At-least-weak (4)	Broad / At-least-weak (5)	Narrow / At-least-weak (6)	Broad / At-least-weak (7)	Narrow / At-least-weak (8)
Ln[1+Attitude index], 1972	0.195 (3.23)***	0.145 (2.79)***	-0.131 (2.04)**	-0.155 (2.86)***	-0.232 (3.21)***	-0.160 (2.71)***	-0.270 (3.30)***	-0.156 (2.31)**
Ln[1+Attitude index], 1979	0.067 (0.93)	0.008 (0.14)	-0.435 (5.34)***	-0.279 (4.65)***	-0.578 (6.56)***	-0.405 (6.10)***	-0.673 (6.96)***	-0.379 (5.26)***
Male	0.103 (1.80)*	0.111 (1.94)*	-0.663 (10.70)***	-0.682 (11.00)***	0.120 (2.02)**	0.088 (1.47)	-0.518 (7.15)***	-0.543 (7.54)***
Race: Black	0.224 (2.03)**	0.211 (1.93)*	0.401 (3.10)***	0.399 (3.10)***	0.049 (0.36)	0.051 (0.38)	0.244 (1.59)	0.252 (1.65)*
Race: Other	0.120 (1.12)	0.121 (1.12)	0.375 (3.26)***	0.378 (3.30)***	0.122 (1.10)	0.107 (0.96)	0.037 (0.28)	0.024 (0.18)
Log of Cognitive ability test	0.166 (1.01)	0.171 (1.04)	0.537 (3.10)***	0.520 (2.99)***	0.709 (3.82)***	0.695 (3.77)***	0.244 (1.15)	0.246 (1.17)
Aptitude: High	-0.148 (2.52)**	-0.149 (2.55)**	-0.178 (2.67)***	-0.174 (2.60)***	-0.098 (1.49)	-0.098 (1.50)	-0.219 (2.65)***	-0.221 (2.66)***
Aptitude: Low	0.048 (0.51)	0.057 (0.60)	-0.269 (2.85)***	-0.290 (3.06)***	0.137 (1.42)	0.102 (1.05)	0.030 (0.27)	-0.006 (0.06)
Ln[Percentile rank in class]	-0.112 (2.22)**	-0.114 (2.26)**	0.170 (3.48)***	0.166 (3.41)***	-0.030 (0.59)	-0.030 (0.59)	-0.073 (1.32)	-0.073 (1.32)
Ln[1 + Yrs of education post high school, 1979]	-0.583 (12.21)***	-0.593 (12.43)***	0.364 (7.59)***	0.373 (7.79)***	0.640 (13.97)***	0.656 (14.41)***	0.513 (9.76)***	0.532 (10.19)***
Tenure	-0.069 (1.52)	-0.067 (1.48)	0.110 (2.23)**	0.109 (2.21)**	0.066 (1.28)	0.064 (1.23)	0.048 (0.79)	0.044 (0.73)
Tenure ²	0.011 (2.08)**	0.010 (2.04)**	-0.009 (1.64)	-0.009 (1.66)*	-0.005 (0.82)	-0.005 (0.81)	-0.001 (0.16)	-0.001 (0.11)
Age	4.259 (1.10)	4.235 (1.10)	7.419 (2.01)**	7.561 (2.06)**	2.692 (0.77)	2.975 (0.87)	1.270 (0.35)	1.655 (0.46)
Age ²	-0.066 (1.11)	-0.065 (1.10)	-0.114 (2.01)**	-0.116 (2.05)**	-0.043 (0.80)	-0.047 (0.90)	-0.019 (0.34)	-0.025 (0.46)
Missing 1979 Attitude Index ^a	-0.063 (0.51)	-0.065 (0.53)	-0.237 (1.76)*	-0.227 (1.70)*	-0.335 (2.56)**	-0.318 (2.44)**	0.167 (1.03)	0.191 (1.17)
	chi2(15) = 332.5	chi2(15) = 329.8	chi2(15) = 346.2	chi2(15) = 333.7	chi2(15) = 359.4	chi2(15) = 353.4	chi2(15) = 238.8	chi2(15) = 204.3
Observations	4922	4922	4922	4922	4922	4922	4922	4922

Absolute values of z-statistics are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Results are robust to the inclusion of controls for high-school athletic participation.

^a Results are robust to dropping observations with missing variables.

Table 9: The effect of poor attitude in high school (1972) on the degree of on-the-job supervision or lack of own discretion (1986).

Coefficients are from the estimation of ordered-Logit models. Respondents were asked the following question: "Please think about your supervisor or the person who had most control over what you actually did on the job. Which of the following best describes how closely this person supervised you?" Responses are ordered according to the following key: "There was no such person" (= 1), "I was more or less my own boss within the general policies of the organization," "My supervisor gave me some freedom in deciding what I did and how I did it," "My supervisor decided what I did, but I decided how I did it," and, "My supervisor decided both what I did and how I did it" (= 5).

Independent variable	Broad Attitude Index				Narrow Attitude Index			
	At-least-weak positions		Strong positions		At-least-weak positions		Strong positions	
	Ordered Logit (1)	Control for intermediate measure of attitude ^a (2)	Ordered Logit (3)	Control for intermediate measure of attitude ^a (4)	Ordered Logit (5)	Control for intermediate measure of attitude ^a (6)	Ordered Logit (7)	Control for intermediate measure of attitude ^a (8)
Ln[1+Attitude index], 1972	0.236 (3.81)***	0.166 (2.55)**	0.184 (3.57)***	0.157 (2.91)***	0.162 (3.05)***	0.132 (2.40)**	0.129 (1.16)	0.127 (1.14)
Ln[1+Attitude index], 1979		0.333 (4.31)***		0.119 (2.12)**		0.170 (2.82)***		0.065 (0.50)
Male	-0.254 (4.69)***	-0.241 (4.45)***	-0.254 (4.71)***	-0.250 (4.63)***	-0.244 (4.52)***	-0.229 (4.24)***	-0.252 (4.68)***	-0.250 (4.62)***
Race: Black	0.556 (5.61)***	0.563 (5.65)***	0.550 (5.50)***	0.555 (5.50)***	0.546 (5.48)***	0.552 (5.51)***	0.536 (5.36)***	0.529 (5.24)***
Race: Other	0.215 (1.98)**	0.225 (2.08)**	0.210 (1.93)*	0.219 (2.01)**	0.218 (2.02)**	0.227 (2.10)**	0.221 (2.03)**	0.222 (2.04)**
Log of Cognitive ability test	-0.545 (3.49)***	-0.538 (3.42)***	-0.551 (3.50)***	-0.546 (3.46)***	-0.531 (3.41)***	-0.525 (3.36)***	-0.543 (3.48)***	-0.542 (3.47)***
Aptitude: High	0.046 (0.73)	0.025 (0.40)	0.050 (0.79)	0.039 (0.62)	0.039 (0.62)	0.029 (0.45)	0.053 (0.83)	0.051 (0.81)
Aptitude: Low	0.049 (0.59)	0.042 (0.50)	0.058 (0.69)	0.058 (0.69)	0.061 (0.72)	0.067 (0.80)	0.059 (0.70)	0.057 (0.68)
Ln[Percentile rank in class]	-0.019 (0.39)	-0.025 (0.51)	-0.019 (0.39)	-0.018 (0.38)	-0.024 (0.48)	-0.025 (0.51)	-0.029 (0.59)	-0.026 (0.54)
Ln[1 + Yrs of education post high school, 1985]	-0.272 (6.12)***	-0.260 (5.82)***	-0.274 (6.16)***	-0.264 (5.87)***	-0.282 (6.37)***	-0.274 (6.20)***	-0.286 (6.48)***	-0.285 (6.44)***
Tenure	-0.110 (2.35)**	-0.113 (2.42)**	-0.109 (2.36)**	-0.112 (2.40)**	-0.107 (2.31)**	-0.108 (2.33)**	-0.106 (2.28)**	-0.105 (2.27)**
Tenure ²	0.007 (1.37)	0.007 (1.45)	0.007 (1.34)	0.007 (1.39)	0.007 (1.32)	0.007 (1.37)	0.006 (1.25)	0.006 (1.24)
Age	-1.015 (0.36)	-0.993 (0.35)	-0.845 (0.30)	-0.777 (0.27)	-1.007 (0.36)	-1.082 (0.38)	-1.125 (0.40)	-1.128 (0.40)
Age ²	0.016 (0.37)	0.016 (0.37)	0.014 (0.31)	0.013 (0.29)	0.016 (0.37)	0.017 (0.40)	0.018 (0.41)	0.018 (0.41)
Missing 1979 Attitude Index ^a		0.088 (0.75)		0.089 (0.76)		0.081 (0.69)		0.085 (0.72)
	chi2(13) = 219.5	chi2(15) = 239.3	chi2(13) = 223.3	chi2(15) = 232.0	chi2(13) = 210.3	chi2(15) = 222.6	chi2(13) = 207.6	chi2(15) = 211.7
Observations	5076	5076	5076	5076	5076	5076	5076	5076

Absolute values of z-statistics are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Results are robust to the inclusion of controls for high-school athletic participation.

^a Results are robust to dropping observations with missing variables.

Table 10: The effect of poor attitude in high school (1972) on subsequent job satisfaction (1986) – “*broad definition – strong position.*”

Coefficients are from the estimation of ordered-Logit models. Respondents were asked the following question: “How satisfied were you with the following aspects of your current job?” Responses are ordered according to the following key: “Very satisfied” (= 1), “Satisfied,” “No opinion,” “Dissatisfied,” and, “Very dissatisfied” (= 5).

Independent variable	Pay and fringe benefits	Importance and challenge	Working conditions	Opportunity for promotion and advancement with this employer	Opportunity for promotion and advancement in this line of work	Opportunity to use past training and education	Security and permanence	Supervisor	Opportunity for developing new skills	The pride and respect I received from family / friends being in this line of work	Relationships with Others	Job as a whole
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Ln[1 + Attitude index], 1972	0.076 (1.32)	0.122 (2.32)**	0.147 (2.70)***	0.149 (2.83)***	0.114 (2.20)**	0.174 (3.25)***	0.103 (1.87)*	0.133 (2.63)***	0.130 (2.50)**	0.155 (2.73)***	0.086 (1.53)	0.106 (1.89)*
Ln[1 + Attitude index], 1979	-0.038 (0.65)	0.097 (1.66)*	0.012 (0.19)	0.095 (1.78)*	0.074 (1.34)	0.128 (2.13)**	0.023 (0.41)	0.017 (0.30)	0.167 (2.95)***	0.172 (3.07)***	0.050 (0.84)	0.048 (0.81)
Male	0.180 (2.77)***	0.021 (0.34)	0.045 (0.74)	-0.156 (2.55)**	-0.210 (3.46)***	0.228 (3.71)***	0.336 (5.61)***	0.186 (3.20)***	0.051 (0.87)	0.171 (2.87)***	0.267 (4.30)***	0.174 (2.75)***
Race: Black	0.142 (1.23)	0.312 (2.79)***	0.350 (3.50)***	0.125 (1.11)	0.161 (1.40)	0.222 (1.83)*	0.267 (2.57)**	0.180 (1.73)*	0.245 (2.19)**	-0.008 (0.07)	0.122 (1.13)	0.367 (3.25)***
Race: Other	-0.190 (1.71)*	-0.071 (0.68)	-0.054 (0.43)	-0.069 (0.68)	0.038 (0.34)	0.042 (0.39)	0.002 (0.02)	-0.010 (0.10)	-0.097 (0.93)	-0.235 (2.17)**	-0.275 (2.39)**	-0.122 (0.97)
Log of Cognitive ability test	-0.287 (1.59)	-0.506 (3.03)***	-0.299 (1.67)*	-0.463 (2.81)***	-0.437 (2.55)**	-0.541 (3.18)***	-0.420 (2.66)***	0.045 (0.32)	-0.346 (2.00)**	-0.625 (4.00)***	-0.657 (4.20)***	-0.521 (3.14)***
Aptitude: High	0.040 (0.63)	0.037 (0.56)	0.045 (0.67)	0.024 (0.40)	-0.009 (0.14)	0.014 (0.22)	0.165 (2.50)**	0.072 (1.12)	0.042 (0.67)	0.200 (3.05)***	-0.008 (0.11)	0.137 (2.09)**
Aptitude: Low	0.029 (0.31)	-0.205 (2.47)**	-0.039 (0.43)	-0.199 (2.33)**	-0.159 (1.83)*	-0.127 (1.56)	0.138 (1.65)*	-0.106 (1.29)	-0.197 (2.41)**	-0.233 (2.53)**	-0.076 (0.81)	-0.247 (2.80)***
Ln[Percentile rank in class]	-0.068 (1.48)	-0.061 (1.28)	-0.019 (0.43)	-0.093 (1.95)*	0.008 (0.19)	-0.042 (0.93)	0.002 (0.04)	-0.098 (2.29)**	-0.008 (0.18)	0.011 (0.23)	0.084 (1.83)*	-0.023 (0.49)
Ln[1 + Yrs of education post high school, 1986]	0.200 (4.24)***	-0.314 (6.86)***	-0.104 (2.22)**	0.033 (0.76)	-0.150 (3.31)***	-0.417 (9.69)***	-0.074 (1.58)	-0.022 (0.52)	-0.242 (5.38)***	-0.236 (4.97)***	-0.047 (1.01)	-0.111 (2.43)**
Tenure	0.004 (0.09)	0.089 (1.78)*	0.148 (2.84)***	0.289 (5.86)***	0.271 (5.66)***	0.204 (3.95)***	-0.000 (0.01)	0.133 (2.79)***	0.208 (4.16)***	0.057 (1.12)	0.042 (0.81)	0.129 (2.48)**
Tenure ²	-0.002 (0.30)	-0.006 (1.17)	-0.013 (2.29)**	-0.024 (4.36)***	-0.020 (3.80)***	-0.016 (2.91)***	-0.006 (1.06)	-0.009 (1.75)*	-0.017 (3.17)***	-0.003 (0.60)	-0.006 (1.08)	-0.011 (1.99)**
Age	0.533 (0.14)	-3.825 (1.44)	-2.685 (0.81)	-4.569 (1.45)	-3.569 (1.23)	-2.808 (1.07)	-0.775 (0.23)	-3.874 (1.23)	-2.850 (0.98)	-0.017 (0.01)	-4.678 (1.12)	-3.699 (1.16)
Age ²	-0.008 (0.14)	0.060 (1.48)	0.041 (0.81)	0.071 (1.47)	0.056 (1.25)	0.044 (1.09)	0.013 (0.24)	0.060 (1.24)	0.045 (1.03)	0.001 (0.03)	0.073 (1.13)	0.058 (1.18)
Ln[Weekly wage]	-0.850 (11.10)***	-0.316 (6.30)***	-0.157 (3.72)***	-0.397 (7.49)***	-0.450 (8.25)***	-0.294 (5.56)***	-0.301 (5.74)***	0.013 (0.32)	-0.239 (5.72)***	-0.312 (5.68)***	-0.108 (2.23)**	-0.275 (5.30)***
Missing Weekly wage ^a	0.174 (2.29)**	0.113 (1.42)	0.160 (2.01)**	0.173 (2.33)**	0.239 (3.06)***	0.192 (2.50)**	0.192 (2.87)***	0.192 (2.63)***	0.063 (0.85)	0.073 (0.92)	0.121 (1.49)	-0.007 (0.08)
Missing 1979 Attitude index ^a	0.302 (2.43)**	0.096 (0.75)	0.031 (0.26)	0.129 (0.95)	0.006 (0.05)	0.049 (0.36)	0.173 (1.45)	-0.032 (0.29)	0.011 (0.09)	0.160 (1.25)	-0.011 (0.09)	0.073 (0.54)
	chi2(17) =	chi2(17) =	chi2(17) =	chi2(17) =	chi2(17) =	chi2(17) =	chi2(17) =	chi2(17) =	chi2(17) =	chi2(17) =	chi2(17) =	chi2(17) =
	181.2	240.2	77.4	183.1	274.9	320.9	142.0	75.6	172.4	136.6	65.5	89.4
Observations	5103	5103	5103	5103	5103	5103	5103	5103	5103	5103	5103	5103

Absolute values of z-statistics are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Results are robust to the inclusion of controls for high-school athletic participation.

^a Results are robust to dropping observations with missing variables.

Table 11: The effect of poor attitude in high school (1972) on degree of overall satisfaction with job, contingent on employment (1986).

Coefficients are from the estimation of ordered-Logit models. Respondents were asked the following question: "How satisfied were you with [your current job as a whole]?" Responses are ordered according to the following key: "Very satisfied" (= 1), "Satisfied," "No opinion," "Dissatisfied," and, "Very dissatisfied" (= 5).

Independent variable	Broad Attitude Index				Narrow Attitude Index			
	At-least-weak positions		Strong positions		At-least-weak positions		Strong positions	
	Ordered Logit	Control for intermediate measure of attitude	Ordered Logit	Control for intermediate measure of attitude	Ordered Logit	Control for intermediate measure of attitude	Ordered Logit	Control for intermediate measure of attitude
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln[1 + Attitude index], 1972	0.258 (3.91)***	0.160 (2.37)**	0.116 (2.14)**	0.106 (1.89)*	0.288 (5.05)***	0.241 (4.13)***	0.235 (2.28)**	0.235 (2.29)**
Ln[1 + Attitude index], 1979		0.493 (6.20)***		0.048 (0.81)		0.282 (4.36)***		0.028 (0.18)
Male	0.171 (2.69)***	0.189 (2.96)***	0.173 (2.73)***	0.174 (2.75)***	0.185 (2.92)***	0.207 (3.25)***	0.171 (2.71)***	0.172 (2.71)***
Race: Black	0.381 (3.40)***	0.391 (3.46)***	0.368 (3.27)***	0.367 (3.25)***	0.370 (3.30)***	0.387 (3.43)***	0.353 (3.14)***	0.348 (3.09)***
Race: Other	-0.126 (1.01)	-0.118 (0.95)	-0.125 (1.00)	-0.122 (0.97)	-0.126 (1.01)	-0.117 (0.93)	-0.126 (1.01)	-0.126 (1.00)
Log of Cognitive ability test	-0.516 (3.15)***	-0.508 (3.15)***	-0.522 (3.15)***	-0.521 (3.14)***	-0.494 (3.00)***	-0.488 (2.99)***	-0.519 (3.14)***	-0.518 (3.13)***
Aptitude: High	0.135 (2.04)**	0.104 (1.56)	0.141 (2.14)**	0.137 (2.09)**	0.117 (1.75)*	0.100 (1.50)	0.142 (2.15)**	0.141 (2.14)**
Aptitude: Low	-0.261 (2.96)***	-0.260 (2.95)***	-0.248 (2.82)***	-0.247 (2.80)***	-0.250 (2.84)***	-0.234 (2.65)***	-0.249 (2.84)***	-0.250 (2.85)***
Ln[Percentile rank in class]	-0.019 (0.41)	-0.025 (0.54)	-0.024 (0.52)	-0.023 (0.49)	-0.016 (0.35)	-0.018 (0.38)	-0.026 (0.55)	-0.024 (0.52)
Ln[1 + Yrs of education post high school, 1986]	-0.107 (2.37)**	-0.089 (1.95)*	-0.115 (2.56)**	-0.111 (2.43)**	-0.115 (2.55)**	-0.104 (2.31)**	-0.121 (2.69)***	-0.120 (2.67)***
Tenure	0.128 (2.48)**	0.125 (2.41)**	0.129 (2.49)**	0.129 (2.48)**	0.130 (2.50)**	0.127 (2.44)**	0.129 (2.48)**	0.130 (2.49)**
Tenure ²	-0.011 (1.97)**	-0.011 (1.87)*	-0.011 (2.00)**	-0.011 (1.99)**	-0.011 (1.96)*	-0.011 (1.86)*	-0.011 (1.99)**	-0.011 (2.00)**
Age	-3.788 (1.18)	-3.892 (1.21)	-3.756 (1.18)	-3.699 (1.16)	-3.581 (1.12)	-3.890 (1.22)	-3.855 (1.21)	-3.839 (1.20)
Age ²	0.059 (1.20)	0.061 (1.23)	0.058 (1.20)	0.058 (1.18)	0.056 (1.14)	0.061 (1.24)	0.060 (1.22)	0.060 (1.22)
Ln[Weekly wage]	-0.270 (5.19)***	-0.262 (5.19)***	-0.275 (5.29)***	-0.275 (5.30)***	-0.267 (5.19)***	-0.256 (5.15)***	-0.274 (5.26)***	-0.274 (5.25)***
Missing Weekly wage ^a	-0.005 (0.07)	-0.003 (0.04)	-0.006 (0.08)	-0.007 (0.08)	-0.005 (0.07)	-0.002 (0.03)	-0.009 (0.11)	-0.008 (0.11)
Missing 1979 Attitude index ^a		0.070 (0.52)		0.073 (0.54)		0.064 (0.48)		0.073 (0.54)
	chi2(15) = 99.8	chi2(17) = 144.1	chi2(15) = 88.9	chi2(17) = 89.4	chi2(15) = 110.7	chi2(17) = 132.4	chi2(15) = 87.8	chi2(17) = 88.0
Observations	5103	5103	5103	5103	5103	5103	5103	5103

Absolute values of z-statistics are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Results are robust to the inclusion of controls for high-school athletic participation.

^a Results are robust to dropping observations with missing variables.