Partisan Grading

By TALIA BAR AND ASAF ZUSSMAN*

We study grading outcomes associated with professors in an elite university in the United States who were identified – using voter registration records from the county where the university is located – as either Republicans or Democrats. The evidence suggests that student grades are linked to the political orientation of professors: relative to their Democratic colleagues, Republican professors are associated with a less egalitarian distribution of grades and with lower grades awarded to Black students relative to Whites.
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This paper studies the following question: do professors grade students based solely on objective measures of abilities or is grading affected by some exogenous preferences professors bring with them? More specifically, we explore how the grading outcomes of students are associated with the political orientation of their professors. Studying the effect of preferences on allocation decisions is especially interesting in this context because grades are costless to the professors who award them yet are highly valued by the students who receive them.

The analysis relies on a unique dataset of grades awarded at an elite university in the United States during 2000-2004. Each observation in the dataset has information on an individual student taking a specific course and her final grade in the course. The dataset contains a large number of student, course, and professor characteristics, including the professor's political affiliation which was obtained from voter registration records of the county where the university is located. Our analysis focuses on professors who registered to vote as either Republicans or Democrats and assumes that – in terms of political philosophy – Republicans are conservative and Democrats are liberal.[1]

The two main hypotheses we test are based on key differences between conservative and liberal political philosophies. These differences lie at the heart of political discourse in the United States and beyond and are strongly tied to important economic questions concerning resource allocation, choices and rewards. Perhaps the most important dif-

* Bar: Department of Economics, Cornell University, 464 Uris Hall, Ithaca, NY 14853, e-mail tb97@cornell.edu. Zussman: Department of Economics, The Hebrew University of Jerusalem, Jerusalem 91905, Israel, e-mail: azussman@mscc.huji.ac.il. We thank two anonymous referees, Ran Abramitzky, Greg Besharov, Steve Coate, Ron Ehrenberg, Eric Gould, Ori Heffetz, Renata Kosova, Omer Moav, Moses Shayo, Stas Sokolinski, Nathan Sussman, Romain Wacziarg, Noam Zussman and participants of presentations at Cornell, Hebrew U., the Israeli Economic Association Meeting, Pomona, Stanford, Tel Aviv U. and UCLA for valuable comments. Haim Bar generously helped with the programming. Excellent research assistance was provided by Revital Bar, Li Or Krengel, Daniela Regev and Noa Shikler. We are grateful to the university for providing us with grade data.

[1] While in principle there may be conservative Democrats and liberal Republicans, data from a survey of American professors presented by Neil Gross and Solon Simmons (2007) show that in practice such cases are rare: only 1.1 percent of the professors who classified themselves as Democrats held conservative or very conservative views while none of the professors who classified themselves as Republicans held liberal or very liberal views.

ference is that conservatives believe less strongly than liberals in the justification for governmental action to reduce inequality. Thus the first hypothesis we test is that relative to their Democratic colleagues, Republican professors will be associated with a less egalitarian distribution of grades.

Our analysis of grading egalitarianism can be motivated by an analogy to a central difference between Republicans and Democrats which concerns preferences over taxation and redistribution. Compared to Democrats, Republicans prefer lower levels of (progressive) taxation and redistribution and thus a less egalitarian distribution of net income. Motivated by this analogy, we hypothesize that Republican professors would tend to be associated with a higher relative share of very low and very high grades and by a steeper grade profile with respect to student ability.[2]

The second hypothesis we investigate is based on the ideological divide between conservatives and liberals with respect to the treatment of traditionally disadvantaged groups. Specifically, conservatives believe less strongly than liberals in the justification for preferential treatment of disadvantaged racial and ethnic minorities. Thus, the hypothesis we test is that relative to their Democratic colleagues, Republican professors will be associated with lower grades awarded to students from these groups.

We emphasize that our analysis of the relationship between grading outcomes and the political orientation of professors is positive rather than normative. Grades serve several important functions in the university context: they reward student effort; they assist students in identifying their strengths; and they communicate information to financial aid officers, graduate schools and prospective employers. There is no consensus in the academic world regarding the importance of these functions and on how the shape of the grade distribution could affect them. Thus, in choosing a grade distribution professors may face potential trade-offs. Our hypotheses center on the differences between Republican and Democratic professors in the grade distributions they choose given these potential trade-offs.

The empirical evidence presented below is consistent with both our hypotheses. We find that relative to their Democratic colleagues, Republican professors: (1) are associated with a less egalitarian distribution of grades; (2) assign lower grades to Black students relative to White ones. Our analysis finds practically no association between professor political orientation and the relative grading outcomes of Hispanic and female students.

An obvious question that arises regarding the second finding is whether and to what extent Democratic professors "discriminate" in favor of Black students or Republican professors "discriminate" against them. At this stage we only note that in the absence of an appropriate benchmark for comparison, this question cannot be credibly answered; we provide an extended discussion of this issue in subsection B of section II.

Our study contributes to the growing literature and ongoing policy debate on university grading practices. In a report published by the American Academy of Arts and Sciences,

[2] A crucial difference between the two contexts concerns resource constraints. In the case of taxation, in order to generate a more egalitarian distribution of net income it is necessary to tax the rich (to finance the redistribution to the poor). In the case of grades, in contrast, it is possible to generate a more egalitarian distribution of grades without "taxing" high ability students by simply raising the grades of low ability students.

Henry Rosovsky and Matthew Hartley (2002) examine the evidence for the existence of grade inflation, its origins, and its long-term (detrimental) effects on the academy and society. The report concludes with several recommendations for slowing, and potentially reversing, grade inflation. Valen E. Johnson (2003) provides a comprehensive review of the literature on grade inflation and uses data from a field experiment conducted at Duke University to study grading practices and their consequences. Among other things, Johnson argues that heterogeneity in grading practices distorts course enrollment patterns.[3] Harry R. Lewis (2006) and Alexandra C. Achen and Paul N. Courant (2009) analyze the sources of this heterogeneity. Talia Bar, Vrinda Kadiyali and Asaf Zussman (2009) study the effects of a reform adopted by Cornell University. They show that the reform, which provided students with aggregate grade information at the course level, led to increased enrollment into leniently graded courses and to a rise in the rate of grade inflation.

Within the literature on grading, our paper is the first to rigorously analyze the association between the grading outcomes of students and the political orientation of their professors. We note, however, that we are not the first to point to a possible link between grading and politics. Claims that such a link exists have been made in the past in the public debate regarding grade inflation. In this context, conservative commentators, such as George Will (1976) and Harvey C. Mansfield (2001), were amongst the most vocal critics of rising university grades. The same commentators and others, such as Allan Bloom (1987), have provocatively argued that the application – by liberal professors – of "affirmative action" in the grading of minority students has contributed to the emergence of grade inflation in American universities in the 1960s. Rosovsky and Hartley (2002) and Lewis (2006) have disputed the factual validity of this claim.

There has been much interest in race and gender gaps in education outcomes. Harry Holzer and David Neumark (2000) survey many important contributions to the debate on affirmative action in higher education. Some studies provide evidence on the importance of the match between teacher and student race (Thomas S. Dee, 2004) and gender (Florian Hoffmann and Philip Oreopoulos, 2009a; Scott E. Carrell, Marianne E. Page, and James E. West, 2010). Economists have also studied the effects of teacher quality on student achievement (Hoffman and Oreopoulos, 2009b; Carrell and West, 2010).

Beyond the literature on grading and learning in the university environment, our analysis is related to a large body of research in economics and related fields which examines the effects of agents' preferences on their decision making. A particularly interesting link is with the literature on judicial decision making. The link rests on two main similarities. First, judges, like professors, make decisions in which they do not have a major direct stake but which materially affect others. Second, judges, like professors, enjoy a large degree of discretion in their decision making. This implies that political, racial, and other types of preferences may be factored in the decision making process of members of both groups. The literature on judicial decision making has indeed found evidence of such effects. For example, Cass R. Sunstein, David Schkade, Lisa M. Ellman, and Andres Sawicki (2006) – who study judicial decision making in federal courts in the

[3] In an early study, Richard Sabot and John Wakeman-Linn (1991) show that differences in grading practices across departments impact patterns of course enrollment.

United States – find that judges appointed by Republican presidents consistently vote differently from their colleagues who were appointed by Democrats. A large literature has also examined whether racial and ethnic preferences affect judicial decision making. Moses Shayo and Zussman (forthcoming) summarize the findings in this literature and provide evidence of ethnicity-based judicial ingroup bias in Israeli small claims courts.

The rest of the paper is structured as follows. Section I details how the dataset was constructed and highlights basic patterns found in it. Section II presents the main results of the empirical analysis. Section III reports the results of additional tests. Section IV offers concluding remarks.

I. Dataset: Construction and Basic Patterns

In order to study the association between professor political orientation and grading outcomes we construct a large dataset of undergraduate level course grades awarded at the College of Arts and Sciences of an elite university in the United States between the spring semester of 2000 and the spring semester of 2004. Each observation in the dataset has information on an individual student taking a specific course and her final grade in the course. The dataset contains characteristics of the student, the course and the professor. We obtained the data from the university's registrar. The data included the grades of all students taking undergraduate courses in the College during the period under examination. We focus on cases where a single professor taught the course since only in these cases the professor has complete control over grading outcomes.

In order to identify the preferences of professors we use voter registration records from the county where the university is located. Unites States citizens who wish to vote need to register with the authorities. In the state where the university we examine is located, when registering, a voter may declare an affiliation with a political party (this enables voting in primary elections of that party). We obtained the voter registration data – which are publicly available for a small fee – from the county's board of elections.

We next matched the names of the professors from the grade dataset with those that appear in the voter registration records. Naturally, we could not match all of the professors since some of them were not United States citizens while others were either registered in a different county or not registered at all. The matching process was aided by the fact that the university we study is located in a remote and sparsely populated county.

We were able to match 511 out of 1,169 professors, i.e. about 44 percent of the total. Of these professors, 27 (5.3 percent) are Republicans and 370 (76.3 percent) are Democrats. The rest either registered to vote for smaller parties or were unaffiliated with any party. Table 1 displays the distribution of party affiliation shares across disciplines.[4] The share of Republicans is lowest in the humanities and highest in the natural sciences. The low overall share of Republicans and the differences in the share of Republicans across disciplines are not unique to the university we examine. Figure 1 compares the share of Republicans in different disciplines at the university we examine ("Elite U")

[4] As mentioned above, overall we identified the political affiliation of 511 professors. The total number of professors displayed in Table 1 (550) is larger because some professors teach across disciplinary lines.

with those at the University of California, Berkeley, and at Stanford University (Daniel B. Klein and Andrew Western, 2005). In all three institutions the overall share of Republicans is low and the humanities have a significantly lower share of Republicans than the natural sciences.

[Table 1]
[Figure 1]

Since we are interested in grading outcomes associated with Republican and Democratic professors, we dropped from our dataset grade observations associated with other professors.[5] The final dataset contains 59,874 grade observations. This reflects the grades of 17,062 students taking 3,277 undergraduate level courses with 417 Republican and Democratic professors. Table 2 provides summary statistics for the variables included in the dataset.

[Table 2]

We next turn to an analysis of the relationship between the political identification of professors and grading outcomes in the courses they teach.

II. Results

A. Egalitarianism

Our first hypothesis is that relative to their Democratic colleagues, Republican professors will be associated with a less egalitarian grade distribution. Grades are expected to rise with student ability in courses taught by both Republican and Democratic professors. The less egalitarian preferences of Republican professors will be manifested by a steeper grade profile with respect to student ability.

In this paper we employ student Scholastic Aptitude Test (SAT) scores as a measure of academic ability. The SAT – which assesses critical reading, problem solving, and mathematical reasoning skills – aims to provide an objective way to evaluate a student's potential for college success and is widely used for admission purposes in colleges and universities across the United States. Research has shown that SAT scores are significantly correlated with academic performance in college. For example, using a rich dataset from 28 universities, William G. Bowen and Derek Bok (1998) find that "among both black and white students, those in the highest SAT interval had an appreciably higher average rank in the class than did those who entered with lower SAT scores." Critics of the use of SAT for admissions purposes point out, however, that SAT scores explain only a small fraction of the variation in grades.[6] Economists have fruitfully used SAT scores

[5] In additional analysis we found that grading outcomes associated with unaffiliated professors are practically identical to those associated with Democratic ones. We note that the unaffiliated professors cannot be used as a benchmark for comparison since we do not know what their political preferences actually are, e.g. at least some of them may in fact be "closet" Republicans or Democrats.

[6] For example, analysis using data for all freshman students entering the University of California over a four year period suggests that SAT scores explains 12.8 percent of the variation in students' Grade Point Average in a single-variable prediction equation. Source: University of California (http://www.ucop.edu/news/sat/research.html).

as measures of student "academic aptitude" (Carrell, Page, and West, 2010; Carrell and West, 2010), "academic quality" (Robert E. McCormick and Maurice Tinsley, 1987) and "student ability" (Phillip Saunders, 1971; Bar, Kadiyali and Zussman, 2009).

Before turning to an econometric analysis, we provide some illustrative statistics on the relationship between professor political affiliation and grading egalitarianism. Table 3 displays the distribution of SAT scores and grades in courses taught by Democratic and Republican professors: columns 1-4 show the raw distributions while columns 5-8 show the distributions after adjusting for department-specific means. As columns 1-2 and (even more so) columns 5-6 clearly show, the distributions of SAT scores in courses taught by Democrats and Republicans seem very similar. In contrast, there is a noticeable partisan difference in the distribution of grades: as columns 3-4 and especially columns 7-8 demonstrate, the variance of grades is higher in courses taught by Republicans than in courses taught by Democrats. Moreover, in additional analysis we find that relative to their Democratic colleagues, Republican professors tend to assign more very low and very high grades: the share of the lowest grades (F, D-, D, D+, and C-) out of the total is 6.2 percent in courses taught by Republican professors and only 4.0 percent in courses taught by Democratic professors; the share of the highest grade (A+) out the total is 8.0 percent in courses taught by Republican professors and only 3.5 percent in courses taught by Democratic professors. Both differences are highly statistically significant. These suggestive results are consistent with our grading egalitarianism hypothesis.

[Table 3]

A different illustration of the relationship between political identification and grading egalitarianism is contained in Figure 2. The figure displays mean grades by student SAT score ranges in courses taught by Republican and Democratic professors. The observed pattern is consistent with the hypothesis that Republican professors are associated with a steeper slope of the grade-ability profile, i.e. with higher returns to student ability.

[Figure 2]

Table 4 presents the results of econometric tests of our grading egalitarianism hypothesis. The dependent variable is the student's grade in a given course. The main explanatory variables are a Republican professor indicator and an interaction term between this variable and the student's SAT score. All models include a set of student fixed effects, which alleviate potential biases associated with unobserved student characteristics and with the possibility that course selection may be influenced by these characteristics. We also include in all models a list of professor, course, and (time-varying) student controls. Additionally, column 2 includes discipline fixed effects and column 3 includes department fixed effects. The inclusion of discipline and department fixed effect may alleviate potential biases associated with the nature of the subject being taught. The inclusion of student fixed effects implies that identification comes from a subset of students who attended both courses taught by Republicans and courses taught by Democrats. The additional inclusion of department fixed effects implies that identification comes from a

smaller subset of students who attended both courses taught by Republicans and courses taught by Democrats within the same department.[7]

The results presented in Table 4 are consistent with our grading egalitarianism hypothesis. In all specifications the coefficient on the Republican professor indicator is negative – implying that low ability students can expect lower grades from Republican professors – and the coefficient on the interaction variable is positive – implying that the return to ability is higher when the professor is Republican. The fact that the coefficients barely change when we include discipline indicator variables or department fixed effects increases our confidence that grading outcomes are indeed correlated with professor political identification.

[Table 4]

In Figure 3 we use the coefficients in column 3 of Table 4 to illustrate our results concerning grading egalitarianism. The horizontal axis displays students' SAT scores. The vertical axis displays the difference in expected grade for a student when the professor is a Republican rather than a Democrat. The regression results imply that a student with a (hypothetical) SAT score of 0 can expect a 1.19 units lower grade from a Republican professor than from a Democratic one while for a student with a SAT score of 700 (the lowest score in the sample) the difference is 0.54 grade units. In contrast, a student with a perfect SAT score of 1,600 can expect a 0.30 units higher grade from a Republican professor than from a Democratic one. This is exactly equal to the difference between two consecutive letter grade categories (e.g. A and A+). The threshold SAT level in which a student will be indifferent between taking a course with a Republican professor and a Democratic one is 1,281 ($\sim(1.189/0.928) \times 1,000$), which is roughly at the 25th percentile in the distribution of student SAT scores in the sample.[8]

[Figure 3]

There are several ways to interpret the finding that Republican professors are associated with a less egalitarian distribution of grades. One interpretation is that it reflects a difference in grading practices but not in student performance. In other words, an identical distribution of student performance will translate into different distributions of grades, with Republican professors tending more than their Democratic colleagues to assign low grades to low ability students and high grades to high ability students.

An alternative way to interpret the finding is that it reflects a difference in student performance but not in grading practices. The difference in student performance could be related to the amount of effort professors are willing to invest in helping students of

[7] Of the 17,062 students in the dataset, 5,126 attended both courses taught by Republicans and courses taught by Democrats. Of these, 1,909 attended such courses within the same department. We find typically small but statistically significant differences in student characteristics across these sub-groups, which is not surprising given that the selection of students into classes is not random. This highlights the importance of including student fixed effects in the estimated models. In contrast, within departments we find practically no significant differences in observable course characteristics between courses taught by Republican professors and courses taught by their Democratic colleagues.

[8] This is consistent with the results of additional analysis in which we find that, all else being equal, there is a positive – albeit only marginally significant – difference in the mean student grade awarded by Republicans and Democrats.

different abilities or in the extent to which professors encourage students of different abilities. For example, it is possible that Democratic professors would devote more resources (e.g. in office hours time) to helping low ability students while Republican professors would devote more resources to nurturing high ability students. It may also be the case that Republicans have different teaching or testing styles than Democrats – for example, with different needs for memorization or creativity – and that student performance varies across these heterogeneous learning environments. An additional possibility is that Democrats differentially reward something other than pre-existing talent.

These interpretations are all consistent with our hypothesis. Given that we do not have information on professor or student behavior or details about student course performance (other than final grades) it is impossible for us to determine to what extent each of the interpretations is valid. The important point from our perspective is that the evidence suggests that Republican professors are associated with less egalitarian *grading outcomes*.

B. Students' Race and Ethnicity

We next examine whether professor political identification is associated with differential grading outcomes for students from traditionally disadvantaged racial and ethnic minorities – Blacks and Hispanics. The application of differential grading standards towards these groups obviously requires that the professor knows the race and ethnicity of the students. At the university we examine (as in many other institutions of higher education in the United States) the name of the student appears on written assignments such as problem sets, term papers, and exams. Moreover, at the beginning of each semester professors are supplied with photographs of the students enrolled in their classes. Even if teaching assistants grade students' work, professors are those who ultimately decide how to allocate letter grades. All this makes it plausible that grading will be influenced by student characteristics such as race and ethnicity.

Before turning to an econometric analysis, we illustrate in the raw data the relationship between the political orientation of professors and the grading outcomes of students from traditionally disadvantaged racial and ethnic minorities. Figure 4 displays mean grades by student ethnicity in courses taught by Republican and Democratic professors. Relative to Democratic professors, Republican ones are associated with lower grade assignments for students from all racial/ethnic groups. However, the difference in mean grades is much smaller for White students (0.09) than for Hispanic students (0.29) and Black students (0.45). This pattern is consistent with our hypothesis.

[Figure 4]

Table 5 presents results of an econometric analysis of the question at hand. In all specifications we include department fixed effects, as in column 3 of Table 4, but now the sample is restricted to grades awarded to Black, Hispanic and White students only. This sample restriction does not have much of an effect on our grading egalitarianism results (compare column 1 of Table 5 to column 3 of Table 4). Our focus is on the

interactions between the indicator variable for Republican professors and the indicator variables for minority students.

[Table 5]

We find that Black students receive significantly lower grades (relative to White students) when taking a course with a Republican professor instead of a Democratic one (column 2). The absolute size of this effect, 0.22, is more than two thirds of the difference between two consecutive grade categories and almost a third of the standard deviation of grades in our sample (see Table 2). We also find that Republican professors are associated with lower relative grades for Hispanic students. The magnitude of the differential is, however, much smaller for Hispanics than for Blacks and is not statistically significant. The results presented in column 3 establish that the race and ethnicity results are robust to inclusion of an interaction term between the gender of the student and the political identification of the professor.

Like in the case of grading egalitarianism, the results presented in Table 5 could be interpreted in more than one way. The first interpretation is that while student performance is the same under the Republican and Democratic professors, grading is different. When assigning grades, the professor might consciously or unconsciously take into account students' characteristics such as race. Alternatively, the behavior of the professor toward the student, in class or outside of it, could depend on student characteristics. This differential treatment may in turn influence student performance and hence grading outcomes. An additional possibility might be that the teaching style of Republicans is for some reason relatively less conducive to the acquisition of knowledge by Black students.

The results presented in this subsection naturally raise the question whether and to what extent Democratic professors "discriminate" in favor of Black students or Republican professors "discriminate" against them. Given the nature of the data at our disposal, and more specifically in the absence of an appropriate benchmark for comparison, we cannot make such a judgement. We explain this issue with the aid of results presented in column 4 of Table 5. The regression specification of column 4 differs from that of column 3 in that it drops the student fixed effects but adds the student SAT score and indicators for Black, Hispanic, and female students. For our purposes, the key coefficients in column 4 are those for the Black student indicator and for the interaction term between this variable and the Republican professor indicator. The first variable captures the Black-White grade differential for students attending courses taught by Democratic professors; the second variable captures the difference in the Black-White grade differential between Republican and Democratic professors. The results indicate that (1) Black students obtain on average 0.27 points lower grades than White students when attending courses taught by Democratic professors and (2) Black students obtain on average 0.42 ($0.269 + 0.151$) points lower grades than White students when attending courses taught by Republican professors. What this means is that, controlling for SAT scores, Black students tend to under-perform relative to White students in the university we study. This finding is not new to the literature: see, for example, Bowen and Bok (1998) for an analysis of – and possible explanations for – this phenomenon. For our purposes, the

crucial point to note is that given the available data, it is impossible to establish whether Republican professors, Democratic ones, or both are behind the partisan difference in the racial grade gap.[9]

III. Additional Tests

A. Political Identification and Extreme grades

We next investigate the association between professor political identification and grading outcomes at the bottom and the top of the grading scale. We do so using the same sample used in Table 5. In the university we examine the highest possible grade is A+ (4.3 points). A+ grades account for 4.1 percent of the total in our sample. At the bottom of the grading scale we focus on grades of less than C (2 points). Grades in this category include F, D-, D, D+, and C-. Together these grades account for 4.3 percent of the total in our sample.

We find differences between Republican and Democratic professors in the assignment of the top grade (Table 6, column 1). Low ability students are relatively less likely, and high ability students are relatively more likely, to be awarded the A+ grade from a Republican professor. We also find that relative to White students, Black students are less likely to be awarded the A+ grade when taking a course with a Republican professor rather than with a Democratic one.

[Table 6]

We also find differences between Republican and Democratic professors in the assignment of grades at the bottom of the scale (column 2). Low ability students are relatively more likely, and high ability students are relatively less likely, to be awarded such grades from a Republican professor. The analysis provides evidence that Republican professors are associated with a much higher probability that low grades will be assigned to Black students; the magnitude of the difference is almost four times as large as that found at the top of the grade scale.

B. The Role of Professors' Gender, Age, and Race

One may be concerned that our previous results are driven, at least in part, by gender, age, and race differences among professors. Moreover, gender, age, and race differences in grading outcomes are interesting in their own right. In this subsection we explore these issues.

The voter registration data we use contain information about gender and age but not about race. In order to determine the race of professors we conducted online searches for their photographs. Out of the 511 professors in our original dataset, we were able to

[9] Such an ambiguity characterizes other research on bias, e.g. Joseph Price and Justin Wolfers (2010), who study racial bias among NBA referees, and Shayo and Zussman (forthcoming). Rema Hanna and Leigh L. Linden (2009) illustrate a field experiment methodology that overcomes this obstacle and allows measuring discrimination in educational contexts.

locate the photographs of 453 professors, and identified twelve of them (three percent) as Black. Eleven of the twelve are Democrats and one is unaffiliated. The voter registration records indicate that of the 511 professors, 178 (35 percent) are female. Five of the female professors are Republicans while 142 are Democrats. The age distribution of Republican professors is very similar to that of Democrats: the mean and standard deviation of age is 54 and 11, respectively, for Republicans; the corresponding figures for Democrats are 52 and 11.

Controlling for the gender, age, and race of the professors does not affect our main results (top panel of Table 7). We find two interesting differences in grading outcomes between female and male professors (second panel from the top). First, female professors are slightly more likely than male professors to assign the grade A+ to female students. This is consistent with recent results on the effects of a match between student and professor gender at the college level. For example, Hoffman and Oreopoulos (2009a) find that having a same-sex instructor increases average grade performance and decreases the likelihood of dropping a class; Carrell, Page and West (2010) find that a gender match between student and professor has a powerful positive effect on female students' performance in math and science classes.

Second, female professors grade in a more egalitarian manner than males at the bottom of the grade scale. This result is consistent with recent literature (e.g. Rachel Croson and Uri Gneezy, 2009) which finds that women have more egalitarian preferences than men. With respect to age, we find that older professors seem to be less egalitarian than younger ones, a relationship that is only significant when examining the assignment of A+ grades (third panel from the top). Finally, we find that Black professors do not differ from their non-Black colleagues in their grading practices (bottom panel). However, given that the number of Black professors is so small, this result may simply reflect lack of power.[10]

[Table 7]

IV. Conclusion

We studied grading outcomes associated with professors in an elite university in the United States who were identified – using voter registration records from the county where the university is located – as either Republicans or Democrats. Assuming that Republicans are conservative and Democrats are liberal, the paper tested two main hypotheses which are based on key differences between conservative and liberal political philosophies. The first concerns egalitarianism and the second concerns the treatment of traditionally disadvantaged racial and ethnic minorities. We found that relative to their Democratic colleagues, Republican professors are associated with a less egalitarian distribution of grades and with lower grades awarded to Black students relative to Whites.

[10] Previous research on the effects of a match between teacher and student race has focused on secondary education and produced mixed results. Ronald G. Ehrenberg, Daniel D. Goldhaber, Dominic J. Brewer (1995) find weak effects of such a match. In contrast, Dee (2004) finds that assignment to an own-race teacher significantly increases the math and reading achievements of both Black and White students.

Professors control the allocation of grades which serve as the primary currency of academia. Our results suggest that the allocation of grades is associated with the world-view or ideology of professors. This finding may inform the public debate on potential reforms to university grading practices. To the extent that the application of objective standards is an important university goal, policy makers should consider limiting the discretion professors enjoy when it comes to grading and making it more difficult for them to use student characteristics as factors in the grading process.

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TABLE 1: PARTY AFFILIATION SHARES ACROSS DISCIPLINES

	Republican	Democratic	Green	Independence	Liberal	Working Families	Unaffiliated	
Humanities	0.034	0.801	0.015	0.006	0.000	0.006	0.138	N=326
Social sciences	0.041	0.746	0.025	0.000	0.000	0.008	0.180	N=122
Natural sciences	0.108	0.686	0.000	0.000	0.010	0.000	0.196	N=102
Overall	0.049	0.767	0.015	0.004	0.002	0.005	0.158	N=550

Note: see text for data sources.

TABLE 2: SUMMARY STATISTICS

		N	Mean	Standard Deviation
Grade	Grade	59,874	3.314	0.742
	Grade is less than C	59,874	0.043	0.202
	Grade is A+	59,874	0.041	0.199
Discipline	Humanities	59,874	0.493	0.500
	Social Sciences	59,874	0.359	0.480
	Natural Sciences	59,874	0.148	0.355
Professor	Republican	417	0.065	0.246
	Democratic	417	0.935	0.246
	Female	417	0.353	0.478
	Age (/100)	417	0.523	0.114
	Black	373	0.029	0.169
Course	Level 1	3,277	0.106	0.307
	Level 2	3,277	0.278	0.448
	Level 3	3,277	0.337	0.473
	Level 4	3,277	0.280	0.449
	Credits	3,277	3.643	1.024
	Enrollment (/100)	3,277	0.183	0.489
Student	SAT (/1,000)	17,062	1.359	0.116
	Female	17,062	0.497	0.500
	Age (/100)	17,062	0.202	0.014
	Asian	17,062	0.168	0.374
	Black	17,062	0.052	0.222
	Foreigner	17,062	0.013	0.114
	Hispanic	17,062	0.062	0.242
	Missing ethnicity	17,062	0.082	0.274
	Native American	17,062	0.005	0.071
	Refused to answer	17,062	0.004	0.062
	White	17,062	0.614	0.487
	Freshman	17,062	0.300	0.388
	Sophomore	17,062	0.246	0.319
	Junior	17,062	0.181	0.277
	Senior	17,062	0.266	0.370
	Fifth year	17,062	0.002	0.042
	Graduate	17,062	0.006	0.068

Note: statistics pertain to students taking undergraduate level courses with a single professor who was identified as either a Republican or a Democrat.

TABLE 3: SAT AND GRADE DISTRIBUTIONS

		SAT		Grade		SAT residual		Grade residual	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Professor political affiliation		Dem	Rep	Dem	Rep	Dem	Rep	Dem	Rep
Percentiles	5th	1.15	1.16	2.00	1.70	-0.21	-0.21	-1.30	-1.52
	10th	1.20	1.22	2.30	2.00	-0.15	-0.15	-0.92	-1.22
	25th	1.30	1.31	3.00	3.00	-0.07	-0.06	-0.31	-0.41
	50th	1.38	1.38	3.30	3.30	0.01	0.01	0.09	0.08
	75th	1.45	1.45	4.00	4.00	0.08	0.08	0.48	0.69
	90th	1.50	1.51	4.00	4.00	0.13	0.13	0.74	0.78
	95th	1.53	1.53	4.00	4.30	0.16	0.16	0.78	1.08
Standard deviation		0.12	0.11	0.73	0.83	0.11	0.11	0.71	0.83
F-statistic		1.06***		0.76***		1.03*		0.74***	
Observations		52,141	7,733	52,141	7,733	52,141	7,733	52,141	7,733

Notes: Dem = Democratic professor; Rep = Republican professor; statistics pertain to students taking undergraduate level courses with a single professor who was identified as either a Republican or a Democrat; SAT scores were divided by 1,000; SAT (grade) residuals were obtained from an OLS regression of SAT scores (student grades) on a full set of department fixed effects; F-statistic is for a two-group variance-comparison test; *, **, *** represent statistical significance at the 10, 5, and 1 percent levels.

TABLE 4: GRADING EGALITARIANISM

Dependent variable: student grade			
	(1)	(2)	(3)
Republican professor	-1.205**	-1.234**	-1.189***
	(0.562)	(0.541)	(0.453)
Republican professor * SAT score (/1,000)	0.937**	0.951**	0.928***
	(0.425)	(0.413)	(0.356)
Professor is female	0.091***	0.070**	0.030
	(0.030)	(0.028)	(0.028)
Professor's age (/100)	-0.148	-0.079	-0.015
	(0.128)	(0.116)	(0.108)
Course level 2	-0.069	-0.080**	-0.006
	(0.043)	(0.039)	(0.040)
Course level 3	-0.042	-0.039	0.036
	(0.045)	(0.040)	(0.039)
Course level 4	0.066	0.075*	0.151***
	(0.046)	(0.040)	(0.044)
Course credits	-0.095***	-0.099***	-0.110***
	(0.022)	(0.022)	(0.027)
Course enrollment (/100)	-0.024***	-0.017***	-0.006
	(0.004)	(0.005)	(0.007)
Time trend	0.049***	0.044***	0.036**
	(0.017)	(0.016)	(0.014)
Student is in sophomore year	-0.031	-0.031	-0.027
	(0.040)	(0.036)	(0.031)
Student is in junior year	-0.078	-0.069	-0.048
	(0.073)	(0.067)	(0.059)
Student is in senior year	-0.174*	-0.161*	-0.125
	(0.104)	(0.096)	(0.084)
Student is in fifth year	-0.408	-0.351	-0.246
	(0.261)	(0.257)	(0.239)
Student is in graduate school	0.093	0.125	0.154
	(0.156)	(0.149)	(0.142)
Social sciences		0.031	
		(0.062)	
Humanities		0.181***	
		(0.052)	
Student fixed effects	Yes	Yes	Yes
Department fixed effects	No	No	Yes
Observations	59,874	59,874	59,874
R-squared	0.588	0.594	0.609

Notes: the sample includes grades awarded in undergraduate level courses with a single professor who was identified as either a Republican or a Democrat; regressions were estimated by OLS; standard errors, clustered by professor, are reported in parentheses; *, **, *** represent statistical significance at the 10, 5, and 1 percent levels.

TABLE 5: EGALITARIANISM, RACE, AND ETHNICITY

Dependent variable: student grade				
	(1)	(2)	(3)	(4)
Republican professor	-1.248***	-0.967**	-1.028***	-1.593***
	(0.432)	(0.381)	(0.398)	(0.550)
Republican professor * SAT score	0.987***	0.793**	0.825***	1.194***
	(0.345)	(0.308)	(0.317)	(0.416)
Republican professor * Black student		-0.221***	-0.222***	-0.151**
		(0.057)	(0.057)	(0.072)
Republican professor * Hispanic student		-0.053	-0.054	-0.030
		(0.034)	(0.033)	(0.028)
Republican professor * female student			0.036	0.055*
			(0.022)	(0.031)
SAT score				1.191***
				(0.077)
Black student				-0.269***
				(0.022)
Hispanic student				-0.202***
				(0.018)
Female student				0.150***
				(0.013)
Student fixed effects	Yes	Yes	Yes	No
Department fixed effects	Yes	Yes	Yes	Yes
Professor controls	Yes	Yes	Yes	Yes
Course controls	Yes	Yes	Yes	Yes
Student controls	Yes	Yes	Yes	Yes
Observations	45,637	45,637	45,637	45,637
R-squared	0.607	0.607	0.608	0.144

Notes: the sample includes grades awarded to Black, Hispanic and White students in undergraduate level courses with a single professor who was identified as either a Republican or a Democrat; regressions were estimated by OLS; standard errors, clustered by professor, are reported in parentheses; *, **, *** represent statistical significance at the 10, 5, and 1 percent levels.

TABLE 6: GRADES AT THE TAILS OF THE DISTRIBUTION

Dependent variable	*Grade is A+*	*Grade is less than C*
	(1)	(2)
Republican professor	-0.266**	0.287**
	(0.127)	(0.114)
Republican professor * SAT score (/1,000)	0.208**	-0.221***
	(0.103)	(0.085)
Republican professor * Black student	-0.020***	0.074***
	(0.007)	(0.028)
Republican professor * Hispanic student	-0.008	0.009
	(0.009)	(0.020)
Republican professor * female student	0.013	-0.012*
	(0.009)	(0.006)
Student fixed effects	Yes	Yes
Department fixed effects	Yes	Yes
Professor controls	Yes	Yes
Course controls	Yes	Yes
Student controls	Yes	Yes
Observations	45,637	45,637
R-squared	0.374	0.447

Notes: the sample includes grades awarded to Black, Hispanic and White students in undergraduate level courses with a single professor who was identified as either a Republican or a Democrat; grades of less than C include the following categories: F, D-, D, D+, and C-; regressions were estimated by OLS; standard errors, clustered by professor, are reported in parentheses; *, **, *** represent statistical significance at the 10, 5, and 1 percent levels.

TABLE 7: THE ROLE OF PROFESSORS' GENDER, AGE, AND RACE

	Dependent variable:		
	Grade	*Grade is A+*	*Grade is less than C*
	(1)	(2)	(3)
Republican professor	-1.036***	-0.255**	0.267***
	(0.336)	(0.105)	(0.089)
Republican professor * SAT score (/1,000)	0.835***	0.200**	-0.206***
	(0.268)	(0.086)	(0.067)
Republican professor * Black student	-0.222***	-0.019**	0.071**
	(0.064)	(0.008)	(0.030)
Republican professor * Hispanic student	-0.034	-0.009	-0.002
	(0.043)	(0.009)	(0.020)
Republican professor * female student	0.043*	0.015*	-0.008
	(0.023)	(0.009)	(0.006)
Female professor	0.306	-0.071	-0.106**
	(0.197)	(0.056)	(0.052)
Female professor * SAT score (/1,000)	-0.217	0.053	0.077**
	(0.132)	(0.042)	(0.036)
Female professor * Black student	0.005	-0.006	-0.008
	(0.054)	(0.008)	(0.017)
Female professor * Hispanic student	0.073*	0.012	-0.022*
	(0.041)	(0.009)	(0.013)
Female professor * female student	0.028	0.018*	0.004
	(0.024)	(0.010)	(0.006)
Professor's age	-0.718	-0.367*	0.424
	(0.957)	(0.193)	(0.297)
Professor's age * SAT score (/1,000)	0.590	0.289*	-0.333
	(0.675)	(0.149)	(0.210)
Professor's age * Black student	0.074	-0.002	0.020
	(0.223)	(0.029)	(0.073)
Professor's age * Hispanic student	0.109	0.000	0.097*
	(0.153)	(0.040)	(0.054)
Professor's age * female student	-0.023	0.019	-0.004
	(0.087)	(0.025)	(0.025)
Black professor	0.181	0.088	-0.032
	(0.516)	(0.067)	(0.218)
Black professor * SAT score (/1,000)	-0.208	-0.074	0.044
	(0.354)	(0.047)	(0.157)
Black professor * Black student	0.075	0.010	-0.021
	(0.092)	(0.015)	(0.033)
Black professor * Hispanic student	-0.183	-0.012	0.040
	(0.127)	(0.022)	(0.050)
Black professor * female student	-0.022	0.005	0.013
	(0.050)	(0.010)	(0.023)
Student fixed effects	Yes	Yes	Yes
Department fixed effects	Yes	Yes	Yes
Course controls	Yes	Yes	Yes
Student controls	Yes	Yes	Yes
Observations	41,406	41,406	41,406
R-squared	0.622	0.397	0.468

Notes: the sample includes grades awarded to Black, Hispanic and White students in undergraduate level courses with a single professor who was identified as (1) either a Republican or a Democrat and (2) either Black or non-Black; grades of less than C include the following categories: F, D-, D, D+, and C-; regressions were estimated by OLS; standard errors, clustered by professor, are reported in parentheses; *, **, *** represent statistical significance at the 10, 5, and 1 percent level.

FIGURE 1: SHARE OF REPUBLICANS ACROSS DISCIPLINES

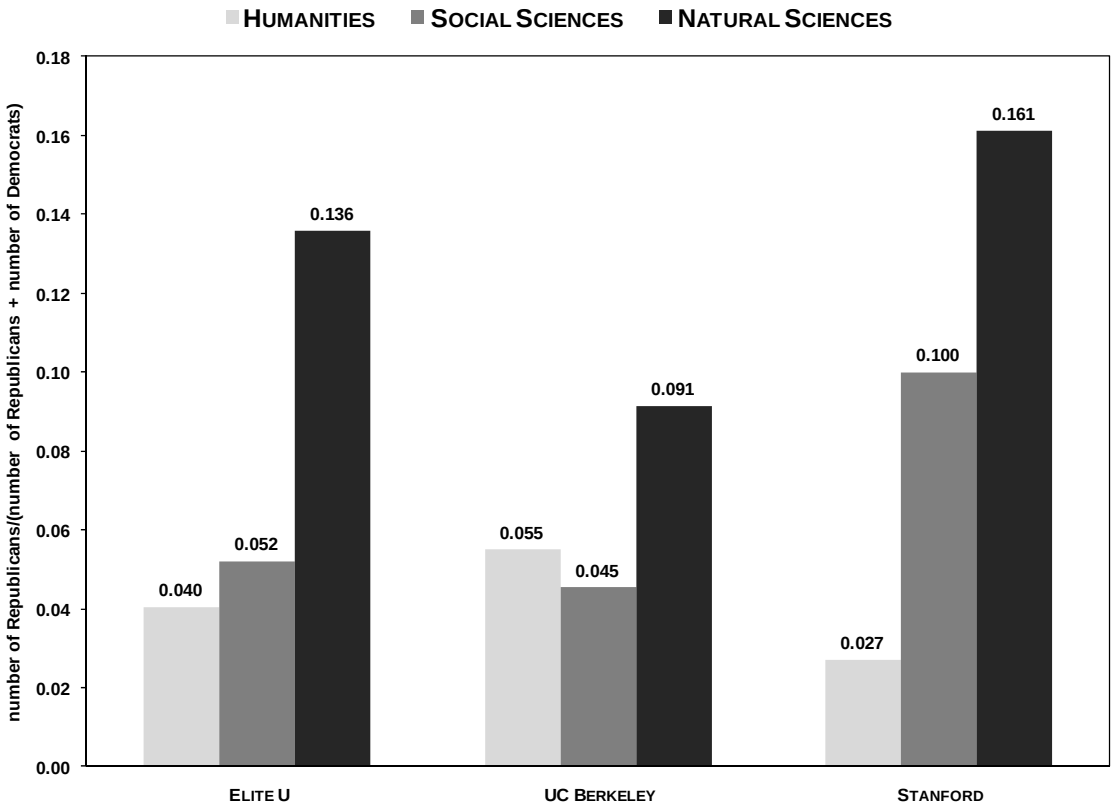

FIGURE 2: MEAN GRADE BY STUDENT SAT SCORE RANGE

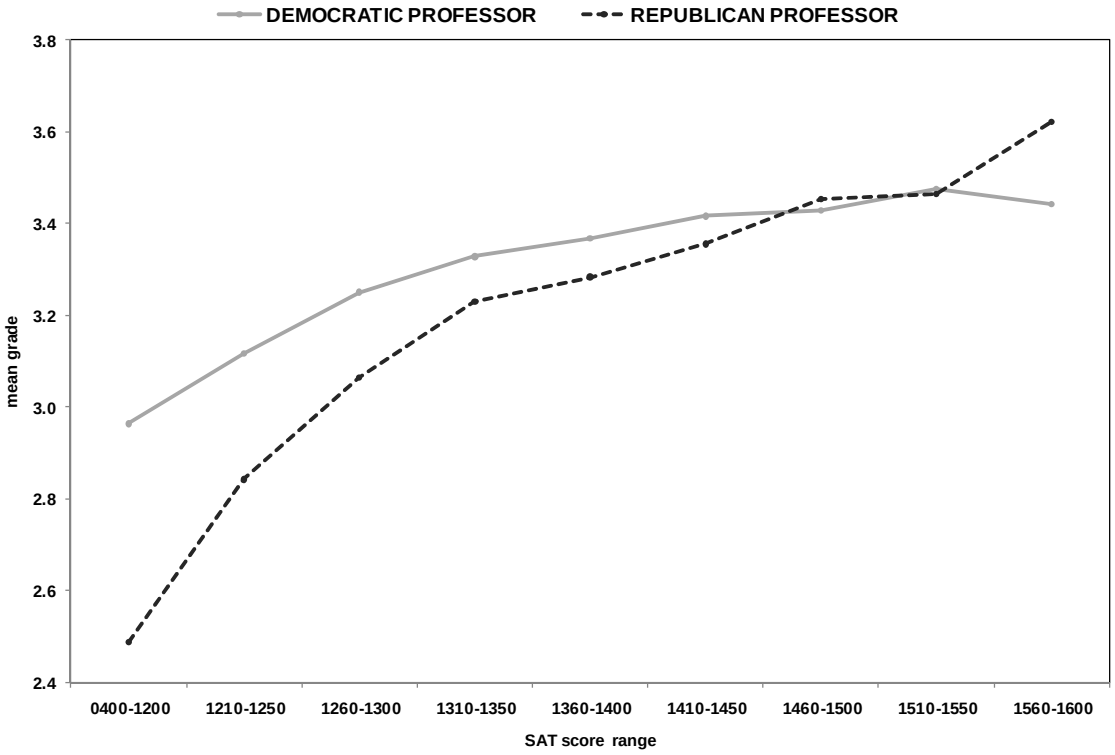

FIGURE 3: GRADING EGALITARIANISM

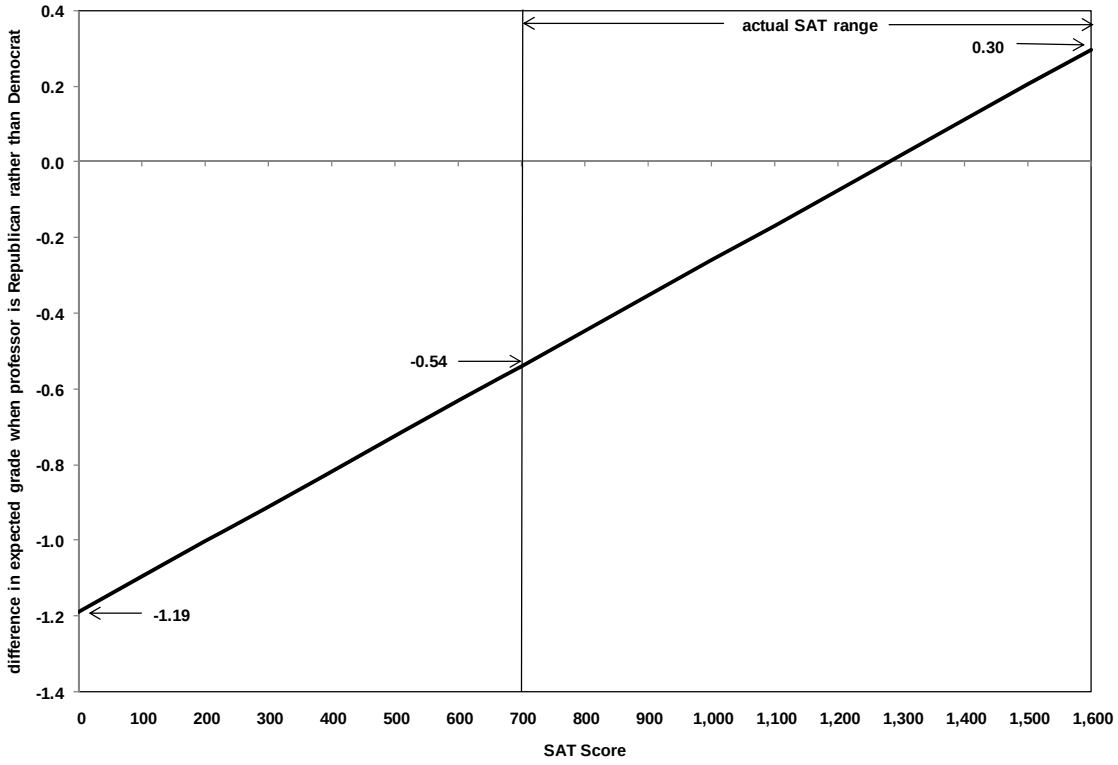

FIGURE 4: MEAN GRADE BY STUDENT RACE AND ETHNICITY