Ask and You Shall Receive? Gender Differences in Regrades in College

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Online Appendix

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Appendix A1. Instructor Survey

a. Instructor Survey Sample

For the instructor survey, invitational emails were disseminated to all faculty members and graduate students across all colleges at CSU. For eligibility, instructors must have taught at least one undergraduate course and experienced regrade requests at the end of a semester. The email contained an online survey link. 154 instructors (including graduate teaching assistants) completed the instructor survey between October and December, 2018.

The average (median) time taken to complete the survey was 11.94 (8.71) minutes. The respondents were over-represented by female instructors (58 percent female in the survey compared to 48 percent in the administrative records) and under-represented by non-tenure tracked instructors (26 percent non-tenure tracked instructors in the survey as opposed to 49 percent in the administrative records). Weighted by class sizes, male students represented 52.5 percent of the classes in the sample which was slightly higher than the 46.6 percent in the administrative records. Instructors reported that 5.94 percent of their students requested to change their final grade at the end of the semester, and 11.2 percent of students requested regrades during the semester. Weighted by class sizes, instructors who had experienced regrade requests reported that 0.727 percent of the grades were corrected to a better grade at the end of the semester. The reported upward corrections were more frequent than the corresponding proportion of 0.439 percent in administrative records because the instructor survey only elicited participation of instructors who had experienced regrade requests.[1]

[1] In the sub-sample collected between November 30 and December 9, 2018, we allowed all instructors to participate. The reported upward regrades comprises 0.354 percent of the students in the sub-sample—close to the statistic from the administrative records. This exercise confirms that the difference between the instructor survey and the administrative records is due to the exclusion of instructors who had never experienced regrade requests in the survey. To keep the sample consistent, we report all the results conditional on instructors who had experienced some regrade requests at the end of the semester.

b. Instructor Survey Instrument

The purpose of this survey is to understand regrade requests by students. The survey should take 10 minutes of your time. Assistant Professor Dr. Hsueh-Hsiang Li of the Department of Economics at Colorado State University is conducting this study.

Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty. For this study, we will collect information about student requests to reconsider a grade for a course or on an assignment or some other course component (midterm, final, project etc.), along with some basic information about yourself and the courses you teach. Any names associated with the survey will be removed from publications to protect participants' privacy. There are no direct benefits or known risks associated with this research.

If you have any questions, please contact Dr. Hsueh-Hsiang Li at Hsueh-hsiang.li@colostate.edu; 970-491-6305. If you have any questions about your rights as a volunteer in this study, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553. The IRB Protocol ID for the study is 17-7489H.

By clicking "NEXT", you acknowledge that you have read the information stated and consent to participate in this study.

SECTION 1

The next few questions are about regrade requests (including grade corrections or changes) you get at the **END** of the semester regarding the **FINAL** class grade after you have posted the grades on Canvas or submitted them through ARIESWEB.

Q1. At the **END** of a typical semester in the last FIVE years, on average, what percent of students in the undergraduate class approach you with a regrade request for the **FINAL** class grade?
[Show a slider scale between 0% (None of them) and 100% (All of them)]

Q2. What proportion of these regrade requests are made by **male** students?
[Show a slider scale between 0% (all females), 50 (as many from males as females), and 100% (all males)]

Q3. Now consider all regrade requests that are made by **male** students at the **END** of the semester. On average, what percent of them result in an improvement, no change, and a deterioration of the **FINAL** class grade? *Please note that your answers need to sum to 100.*

Improvement in grade ___%
No change in grade __%
Deterioration in grade __%

Q4. Now consider all regrade requests that are made by **female** students at the **END** of the semester. On average, what percent of them result in an improvement, no change, and a deterioration of the **FINAL** class grade? *Please note that your answers need to sum to 100.*

Improvement in grade ___%
No change in grade __%
Deterioration in grade __%

Q5. Now consider all regrade requests for the **FINAL** grade that are made by **male** students at the **END** of the semester.

On average, what would you say the ability rank of these male students would be? (*Please answer on a 1-100 scale, where 100 means the highest/best ability rank*)
[Show a slider scale between 1 (Lowest/Worst Ability Rank) and 100 (Highest/Best Ability Rank)]

Q6. Now consider all regrade requests for the **FINAL** grade that are made by **female** students at the **END** of the semester.

On average, what would you say the ability rank of these female students would be? (*Please answer on a 1-100 scale, where 100 means the highest/best ability rank*)
[Show a slider scale between 1 (Lowest/Worst Ability Rank) and 100 (Highest/Best Ability Rank)]

SECTION 2

In addition to regrade requests regarding the final class grade, we are also interested in learning whether students in your class(es) make regrade requests throughout the semester **BEFORE the final class grade is assigned**. The next few questions are about regrade requests (including grade corrections or changes) you get **DURING** the semester.

Q7. **DURING** a typical semester in the last FIVE years, on average, what percent of students in the undergraduate class approach you with a regrade request for an assignment, quiz, or exam?
[Show a slider scale between 0% (None of them) and 100% (All of them)]

Q8. **DURING** a typical semester, what proportion of these regrade requests are made by **male** students?
[Show a slider scale between 0% (all females), 50 (as many from males as females), and 100% (all males)]

Q9. Now consider all regrade requests that are made by **male** students **DURING** the semester. On average, what percent of them result in an improvement, no change, and a deterioration of the grade? *Please note that your answers need to sum to 100.*

Improvement in grade ___%

No change in grade __%
Deterioration in grade __%

Q10. Now consider all regrade requests that are made by **female** students **DURING** the semester. On average, what percent of them result in an improvement, no change, and a deterioration of the grade? *Please note that your answers need to sum to 100.*

Improvement in grade ___%
No change in grade __%
Deterioration in grade __%

Q11. Now consider all regrade requests that are made by **male** students **DURING** the semester.

On average, what would you say the ability rank of these male students would be? (*Please answer on a 1-100 scale, where 100 means the highest/best ability rank*)
[Show a slider scale between 1 (Lowest/Worst Ability Rank) and 100 (Highest/Best Ability Rank)]

Q12. Now consider all regrade requests that are made by **female** students **DURING** the semester.

On average, what would you say the ability rank of these female students would be? (*Please answer on a 1-100 scale, where 100 means the highest/best ability rank*)
[Show a slider scale between 1 (Lowest/Worst Ability Rank) and 100 (Highest/Best Ability Rank)]

SECTION 3

In this section, we are interested in learning whether you have observed any gender differences in students' regrade requests.

Q13. Which of the following statements do you most agree with? Pick only one.

a. Male students tend to be more aggressive than female students about asking for regrades at the **END** of the semester.
b. Male students tend to be as aggressive as female students about asking for regrades at the **END** of the semester.
c. Female students tend to be more aggressive than male students about asking for regrades at the **END** of the semester.

Q14. Which of the following statements do you most agree with? Pick only one.

a. Male students tend to be more aggressive than female students about asking for regrades **DURING** the semester.

b. Male students tend to be as aggressive as female students about asking for regrades **DURING** the semester.
c. Female students tend to be more aggressive than male students about asking for regrades **DURING** the semester.

Q15. Which of the statements is closest to your experience from teaching? Please select only one.

a. The typical male student asking for regrades tends to be of higher ability than the typical female student who asks for regrades.
b. The typical male student asking for regrades tends to be of the same ability as the typical female student who asks for regrades.
c. The typical male student asking for regrades tends to be of lower ability than the typical female student who asks for regrades.

Q16. Which of the statements is closest to your experience from teaching? Please select only one.

a. Regrade requests from male students are more successful than those made by female students.
b. Regrade requests from male students are as successful as those made by female students.
c. Regrade requests from male students are less successful than those made by female students.

Q17. Are there any other gender differences in student behavior that you have observed? [Open-ended]

SECTION 4

Q18. What is your gender?

a. Male
b. Female

Q19. What is your race/ethnicity?

a. Non-Hispanic white
b. Non-Hispanic black
c. Hispanic/Latino
d. Asian/Pacific Islander
e. Other race/ethnicity group

Q20. Is your current job at CSU a tenure track position?

a. Yes
b. No

Q21. What is your job position at Colorado State University?

a. Full professor
b. Associate professor
c. Assistant professor
d. Instructor
e. Graduate student instructor
f. Graduate student teaching assistant
g. Other, _____ (please specify)

Q22. Which primary college are you affiliated with?
[Dropdown menu, see the appendix at the end.]

Q23-30. Which primary department are you affiliated with?
[Dropdown menu depending on answer to Q22, see the appendix at the end.]

Q31. How many years have you taught at CSU?
[Dropdown menu: Less than 1 year, 1, 2, …, 20, More than 20 years.]

Q32. How many years have you taught in post-secondary institutes (including years working at CSU)?
[Dropdown menu: Less than 1 year, 1, 2, …, 20, More than 20 years.]

Q33. How many undergraduate courses have you taught at CSU in the last FIVE years? Please consider multiple sections of a course as separate courses.
[Dropdown menu: 1, 2, ….., 30, More than 30.]

Q34. Approximately how many undergraduate students have taken your courses in TOTAL at CSU in the last FIVE years? _____

Q35. Of these, what proportion have been males?
[Show a slider scale between 0% (all females) and 100% (all males)]

Q36. In a typical undergraduate class that you have taught at CSU in the last FIVE years, what proportion of students (out of 100) belonged to each of the following years? *Note: Your answers need to sum to 100.*

Freshmen ___%
Sophomore ___%
Junior _____%

Senior _____%
Other _____%

Q37. Consider all undergraduate male students in your class(es) at CSU in the last FIVE years. On average, what would you say the ability rank of these male students would be? (*Please answer on a 1-100 scale, where 100 means the highest/best ability rank*)
[Show a slider scale between 1 (Lowest/Worst Ability Rank) and 100 (Highest/Best Ability Rank)]

Q38. Consider all undergraduate female students in your class(es) at CSU in the last FIVE years. On average, what would you say the ability rank of these female students would be? (*Please answer on a 1-100 scale, where 100 means the highest/best ability rank*)
[Show a slider scale between 1 (Lowest/Worst Ability Rank) and 100 (Highest/Best Ability Rank)]

Appendix A2. Student Survey

a. Student Survey Sample

For the student survey, recruiting emails were sent to all undergraduate students on campus. The email mentioned that the survey was about gauging students' experiences with courses, and that the student must have completed at least three courses with letter grades at the time of survey. To prevent selection on our outcome of interest, the invitation did not mention the focus on regrade requests. The email contained the online survey link. As an incentive, respondents were offered a chance to win one out of the ten prizes of $100.[2] The average (median) time taken to complete the survey was 9.44 (7.99) minutes.[3]

1,295 students completed the online student survey during April-May, 2019 (459 respondents started the survey but did not complete it, and hence are not included in the analysis). In the student survey, we asked students about their past behaviors, subjective beliefs, and outcomes regarding grade change requests. The student survey, similar to the administrative records, show a monotonic increase in the share of students by class standing.[4] Although the student survey was over-represented by female students (67 percent), the course-taking patterns appear to be comparable to the underlying population. Similar to the administrative records, among the reported courses, 50 percent of female students were taught by female instructors, while only 35 percent of male students were taught by female instructors. Furthermore, the average years in college are similar for males (2.75) and females (2.72).[5] For students who indicated consideration of regrade requests during past semesters, we further elicited the frequencies of such a consideration and collected information about the instructor and grade outcomes for up to three classes. Importantly, we collected data on students' perception regarding the outcomes of a regrade request: specifically, we elicited students' subjective beliefs about the regrade requests that result in favorable outcomes (a better grade) and unfavorable outcomes. This allows us to understand if male and female students have substantially different beliefs—that is, whether students assess the upside and downside risks differently by gender, and whether the fear of backlash (i.e., students receiving a lower grade after requesting a grade change) is a factor driving gender differences in making grade change requests.

[2] The payments are made in in Ram Cash or Amazon electronic gift cards, depending on students' choices. Ram Cash is a near-cash payment credited to the CSU student accounts that participants can use for consumption on campus.
[3] Time spent on a page is truncated at 10 minutes. The truncation affects fewer than 1% of the pages.
[4] The distribution of participants in the student survey (administrative records) is as follows: 16.5% (9.86%) freshmen, 24.4% (20%) sophomores, 28.8% (25%) juniors, and 30.3% (45.1%) seniors. Any student who has not graduated beyond the fourth year in college is counted as a senior.
[5] The distribution by student standings (i.e., freshman, sophomore, junior, and senior) is also statistically indistinguishable by student gender (i.e., *p*-value is 0.757 for the Kolmogorov-Smirnov test).

b. Student Survey Instrument

Student Survey Consent

The purpose of this survey is to understand students' course experiences. The survey takes no more than 30 minutes of your time. Assistant Professor Dr. Hsueh-Hsiang Li of the Department of Economics at Colorado State University is conducting this study.

If you are an undergraduate student who are 18 years or older, are currently enrolled at Colorado State University, and have completed at least three courses with letter grades at Colorado State University in the last 5 years, you are eligible to participate in this study. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop your participation at any time without penalty. For this study, we will collect information about yourself and the courses you have taken. Participants who complete the survey and provide the required information for payments (CSU student ID, name, and valid email information) will enter into a lottery for a chance to win 1 out of 10 prizes of $100 Ram Cash which will be directly deposited to the winners' Ram Accounts by the end of June in 2019. Each eligible participant has the same chance of winning the lottery. Any duplicate entries of the survey by the same participant will be removed from the lottery drawing. Your name and CSU student ID number will be submitted to CSU financial departments for the payment purposes. Any names and emails associated with the survey will be removed from any other publications to protect participants' privacy. Other than the Ram Cash you may win through the lottery from the participation, there is no other direct benefits or known risks associated with this research.

If you have any questions, please contact Dr. Hsueh-Hsiang Li at Hsueh-hsiang.li@colostate.edu or 970-491-6305. If you have any questions about your rights as a volunteer in this study, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu or 970-491-1553. The IRB Protocol ID for the study is 17-7489H.

By clicking "NEXT", you acknowledge that you have read the information stated and consent to participate in this study.

SECTION 1. Course Information [Repeat this section for 3 times for the three courses.]

In this section, we will ask you a few questions about your course experiences at the Colorado State University.

In some of the questions, you will be asked for the percent chance that you think an event/outcome would happen. Your answers can range from 0 to 100, where 0 means there is absolutely no chance, and 100 means that it is absolutely certain. For example, numbers like: 2 or 5 percent may indicate "almost no chance"; 18 percent or so may mean "not much chance"; 47 or 52 percent chance may be a "pretty even chance"; 83 percent or so may mean a "very good chance"; 95 or 98 percent may mean "almost certain".

1. Since you started at CSU, have you ever approached a class instructor OR considered approaching a class instructor with a regrade request (including grade corrections and changes)? This regrade

request could have been either during the semester or at the end of it, and could have been about homework assignments, quizzes, exams, papers, or the final grade, etc.

Yes
No

[do not allow people to go back after they answer 1, otherwise they may go back and say No once they see the follow-ups]

1.1. [For those who say no to Q1] You said that you have never approached or considered approaching a class instructor with a regrade request. What is the reason for that? [Please check **ALL** that apply.]

_____ The grades I have received have always been correct.

_____ The grades I have received have always been fair.

_____ The grades I have received have always met my expectations.

_____ The instructors I have had would never change the grade.

_____ I would have been embarrassed if the instructor had rejected my request.

_____ It has never occurred to me that I could make such a request.

_____ It would have been too stressful to make such a request.

_____ I was worried the instructor might lower the grade further, or punish me in some other way.

_____Other reasons: _____.

1.1.1. If you had asked the instructor for a regrade, what do you **believe** is the percent chance that your grade would have increased, decreased, or stayed the same? (*Please note that your answers need to sum to 100.)*

Increased ___%
Stayed the same __%
Decreased __%

1.1.2. On a scale from **1 (not stressed at all)** to **7 (extremely stressed)**, how stressed would you have felt if you had asked the instructor for a regrade?

1 2 3 4 5 6 7

1.2. [For those who say yes in 1] In how many courses did you approach or consider approaching the instructor with a regrade request?

1) 1 course
2) 2 courses
3) 3 courses
4) 4 courses
5) 5 or more courses

You reported that you considered approaching or actually approached an instructor with a regrade request in 1/2/3/4/5 or more class(es). **The questions below are for the (second/third) most recent instance(s) where this happened.**

Questions on this page are related to Class No. **1**.

2. When did you take this course?

2010 Spring
2010 Summer
2010 Fall
2011 Spring
2011 Summer
2011 Fall
2012 Spring
2012 Summer
2012 Fall
2013 Spring
2013 Summer
2013 Fall
2014 Spring
2014 Summer
2014 Fall
2015 Spring
2015 Summer
2015 Fall
2016 Spring
2016 Summer

2016 Fall

2017 Spring

2017 Summer

2017 Fall

2018 Spring

2018 Summer

2018 Fall

3. Were the course credits counted towards fulfilling your primary major's requirements?
   ___ Yes ___ No
4. Under which college was the course listed? College of _____. [Choose among the 8 colleges.]
5. Under which department was the course listed? Department of _____. [Choose among departments within a given college.]
6. What was the race of the instructor? ____ Non-Hispanic white
   ____ Non-Hispanic black ____ Hispanic/Latino _____ Asian/Pacific Islander
   _____ Other race/ethnicity group ____ I don't know
7. What was the sex of the instructor? ____ Female _____ Male
8. What was the course instructor's position? ____ Full Professor ___ Associate Professor ___ Assistant Professor ____ Non-Tenure Track Instructor _____ Graduate Student _____ I don't know
9. Approximately how many students were in this class?
   1) No more than 10 students.
   2) 11 – 40 students.
   3) 41 – 90 students.
   4) 91 – 180 students.
   5) 181 – 270 students.
   6) More than 270 students.
10. Of these students, what proportion (between 0 (all female) and 100 (all male) percent) were male? _____
11. How many hours per week on average did you spend on studying (including attending the class) for this course? ____ hours. [Choose between 0 to 168 hours.]
12. What was your attendance rate (between 0 (never attended) to 100 (full attendance) percent)? ___
13. How often did you meet with your instructor outside of the class throughout the semester?
    ____ Never
    ____ Less than once a month

____ 1 – 3 times a month

____ More than 3 times a month

14. BEFORE the class BEGAN, what was the grade you EXPECTED to receive for the course?

____ A+

____ A

____ A–

____ B+

____ B

____ B–

____ C+

____ C

____ D

____ F

15. At the END of the SEMESTER, what was the grade you ORIGINALLY received for the course? By original grade, we mean the grade that was initially assigned to you before you made any regrade request, which may or may not have been changed later.

____ A+

____ A

____ A–

____ B+

____ B

____ B–

____ C+

____ C

____ D

____ F

16. On a scale from 1 (completely disagree) to 7 (completely agree), to what extent do you agree or disagree that the original grade you received at the end of the semester reflected your performance in the class?

1 2 3 4 5 6 7

17. You said you had considered asking the instructor for a regrade. Did you ACTUALLY ask the instructor for a regrade?

____ Yes

____ No

18. [If yes in 17] Did you ask for a regrade during the semester, or at the end of the semester? (Please check **ALL** that apply.)

    During the semester

    At the end of the semester

19. Why did you ask for a regrade? (Please check **ALL** that apply.)

    _____The original grade contained errors.

    _____The grade I received in this course was below what I received in other courses.

    _____The original grade was close to the next higher letter grade.

    _____The original grade was below the grade required by my major/minor.

    _____The original grade would result in academic probation.

    _____The original grade would disqualify me from my financial aid.

    _____The original grade would prevent me from graduation in a timely manner.

    _____I deserved a better grade.

    _____The instructor had the reputation for changing student grades if asked.

    _____It did not hurt to ask.

    _____Other reasons: _____.

    19.1. **BEFORE making the regrading request**, what did you **believe** was the percent chance that the grade would have increased, decreased, or stayed the same as a result of the regrade request? (*Please note that your answers need to **sum to 100**.)*

    Increased ___%
    Stayed the same __%
    Decrease __%

    19.2. **As a RESULT of the regrading**, did the score of any course component (e.g. homework assignments, quizzes, exams, papers, etc.) increase, decrease, or stay the same?

    Increased

    Stayed the same

    Decreased

    19.3. **After asking the instructor to reconsider your grade**, what was the final result of your grade in the course?

    ____ A+

    ____ A

____ A–
____ B+
____ B
____ B–
____ C+
____ C
____ D
____ F

19.4. On a scale from **1 (not stressed at all)** to **7 (extremely stressed)**, how stressed did you feel when you asked the instructor for a regrade?

1 2 3 4 5 6 7

20. [If no in q17] You said you considered asking the instructor for a regrade but then did not actually ask the instructor. What was the reason for that? (Please check **ALL** that apply.)

_____ The instructor would never change the score/grade.

_____ I would have been embarrassed if the instructor had rejected my request.

_____ It was too stressful to make such a request.

_____ I was worried the instructor might lower the grade further, or punish me in some other way.

_____Other reasons: _____.

20.1. If you had asked the instructor for a regrade, what do you **believe** is the percent chance that your grade would have increased, decreased, or stayed the same? (*Please note that your answers need to **sum to 100**.)*

Increased ___%
Stayed the same __%
Decreased __%

20.2. On a scale from **1 (not stressed at all)** to **7 (extremely stressed)**, how stressed would you have felt if you had asked the instructor for a regrade?

1 2 3 4 5 6 7

SECTION 2

In this section, we will ask you a few questions about your attitudes and beliefs.

A2. Student Survey

Q1. Suppose there is a 50% chance for event A to occur and 50% chance for event B to occur. Among the five choices listed below, which one do you prefer the most?

1) 50% chance of event A of receiving $2 and 50% chance of event B of receiving $2
2) 50% chance of event A of receiving $3 and 50% chance of event B of receiving $1.5
3) 50% chance of event A of receiving $4 and 50% chance of event B of receiving $1
4) 50% chance of event A of receiving $5 and 50% chance of event B of receiving $0.5
5) 50% chance of event A of receiving $6 and 50% chance of event B of receiving $0

Q2. On a scale from 1 (never willing) to 7 (always willing), how would you rate your willingness to take risks in daily activities?

Q3. On the scale from 1 (I don't have any control) to 7 (I have full control), how would you rate the control you have over the direction of your life?

Q4. On a scale from 1 (never willing) to 7 (always willing), how would you rate your willingness to give up something that is beneficial for you today in order to benefit more from that in the future?

Q5. For each of the following **three** statements, please indicate the extent to which the statement applies to you on a scale from 1 (never true of me) to 7 (always true of me):

- I often find myself performing tasks that I had intended to do days before
- I often regret not getting to tasks sooner
- I work best at the "last minute" when the pressure is really on

Q6. For each of the following **four** statements, please indicate the extent to which the statement applies to you on a scale from 1 (never true of me) to 7 (always true of me):

- I regret not having asked my course instructor for a regrade during the semester
- I regret not having asked my course instructor for a regrade at the end of the semester
- I regret being too aggressive in my regrade request to my course instructor during the semester
- I regret being too aggressive in my regrade request to my course instructor at the end of the semester

Q7. Relative to your peers with the same major/concentration at CSU, how would you rate your ability?

1) Significantly above average
2) Somewhat above average
3) Average
4) Somewhat below average
5) Significantly below average

Q8. Please write a number next to each statement to indicate the extent to which <u>you agree or disagree with each of the following statements.</u>

I see myself as someone who …	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
… is reserved.	1	2	3	4	5
… is generally trusting.	1	2	3	4	5
… tends to be lazy.	1	2	3	4	5
… is relaxed, handles stress well.	1	2	3	4	5
… has few artistic interests.	1	2	3	4	5
… is outgoing, sociable.	1	2	3	4	5
… tends to find fault with others.	1	2	3	4	5
… does a thorough job.	1	2	3	4	5
… gets nervous easily.	1	2	3	4	5
… has an active imagination.	1	2	3	4	5

SECTION 3. Participant Background

In this section, we will ask you a few questions about your personal background.

1. What is your current class standing? _____ Freshmen _____ Sophomore ____ Junior ____ Senior
2. What is your sex? _____ Female _____ Male
3. What is your race and ethnicity: ____ Non-Hispanic white ____ Non-Hispanic black
   ____ Hispanic/Latino _____ Asian/Pacific Islander _____ Other race/ethnicity group
4. High school GPA: _____
5. Current GPA: _____
6. What is your primary major?
   College of _____ [choose one from the 8 colleges, see appendix.]
   Major in _____ [Depending on colleges, choose one department. See appendix.]

SECTION 4. Participant payment information

To participate in the lottery for a chance to win an award of a $100 Ram Cash, please provide your CSU student ID, name, and email. Once the eligibility is confirmed, you will enter the lottery and have a chance to win one out of the ten $100 Ram Cash. Participants who win the awards will receive

the award directly deposited to their Ram Accounts by the end of June in 2019. The payment notice will be sent to the winners using the email provided by the participants.

1. CSU Student ID Number: _____
2. First Name: _____
3. Last Name: _____
4. Email: _____
5. Do you agree to be contacted via the email you provided for any follow-up studies in the future? ____Yes ____ No

FINISHED

The 10 prizes of the award of $100 Ram Cash will be drawn by the end of June in 2019. The winners will be notified via the email provided by the participants in the survey, and the payment will be directly deposited to the winners' Ram Accounts.

Thank you for your participation in the study.
This concludes the survey of the study. You may close the window now

Appendix A3. Data Comparisons

The seeming discrepancy in reported regrade requests between the instructor survey and the student survey is due to the fact that the two surveys elicit different measurements. While the instructor survey asked instructors about their recollection of the average regrade requests in a typical class in the last five years, the student survey collected information on regrades for up to three courses. To make the statistics from the student survey comparable to those in the instructor survey, our back-of-the-envelope calculations adjust for the likelihood students asked for regrades in a given class and summarize the comparable values below. For instance, 29.9 percent of students stated that they made at least one regrade request during the semester. Since students did not make such a request in *all* classes they took, their average regrade request rate needs to be adjusted by the fraction of classes in which they actually made such requests. Conditional on asking for regrades during the semester, students made such requests in 38.9 percent of their classes. Therefore, the average request rate during the semester would be 29.9% x 38.9% = 11.6 percent, which is very close to the 11.2 percent reported by instructors. A similar adjustment for the end-of-semester requests yields a 6.28 percent regrade request rate, which is also very close to the 5.94 percent derived from the instructor survey.[6]

Although the success rates of regrade requests seem high from the student survey, they applied to classes in which students actually made such a request. Therefore, the overall success rate should be the multiplication of average regrade request rate in a class with the conditional success rate. Once we account for the proportion of students who asked for regrades, the adjusted asking rate in the student survey is 7.16 percent during the semester and 1.97 percent at the end of the semester (see the table below). The adjusted success regrade rates from the student survey are approximately twice as large as those reported by the instructors; this could be due to differences between students and instructors in what constitutes a grade change (for example, instructors may dismiss simple error corrections). Last but not least, both the instructor and student surveys reported a higher grade-change rate than the 0.44 percent shown in the administrative records. It is most likely due to the fact that corrections of final grades can be made before instructors officially submitted the final grades to the Registrar. Hence the administrative records provide the absolute lower bound of grade changes.

[6] The student survey elicited the number of classes in which students ever considered for regrade requests. However, the value is truncated at 5 (i.e., 5 or more). Therefore, we do not observe the true number of classes students considered for regrade requests. Furthermore, we only collected information on whether students actually asked for regrades in no more than 3 classes, and we did not have information on the number of classes a student had taken. Given that freshmen only completed their course work of one semester at the time of the survey and hence are unlikely to be censored by the survey construction, we calculate the fraction of courses freshmen asked for regrades out of three courses as a proxy measure for the request frequency conditional on asking. The proxy measures show that students asked for regrades in 38.9% of their courses during the semester and 37.5% of their courses at the end of the semester.

A3. Data Comparisons

	Administrative data	Instructor survey	Student survey	
			Original	Adjusted
Observations	1,341,552 grade records	154 instructors	1,295 students	
Requests (%): During semester		11.2%	29.9%	11.6%[b]
Requests (%): End of semester		5.94%	16.8%	6.28%[b]
Upward changes (%): During semester		3.53%	61.6%[a]	7.16%[c]
Upward changes (%): End of semester	0.44%	0.73%	31.4%[a]	1.97%[c]
Data qualification	1. Regrades AFTER final grades submission to Registrar. 2. No records on rejected requests. 3. No regrade records during semester.	1. Instructors ever approached with regrade requests. 2. Instructors' experience from last 5 years.	1. Number of classes considered for regrades truncated at 5. 2. Detailed information for up to 3 courses. 3. Students' regrade experience in college.	
Year	2010-2016	2018	2019	

a. Conditional on ever asking for regrades either during or at the end of semester at some point. The success rate of the regrade request in the first reported class is summarized to avoid over-representing students who made multiple requests.

b. The adjusted statistics take into account the fraction of classes in which students asked for regrades conditional on asking. Adjusting for the fraction of classes in which these students asked for regrades (DURING semester: 0.389, END of semester: 0.375), the average request rates are 11.6% during the semester (=29.9% x 0.389) and 6.28% at the end of semester (=16.8% x 0.375).

c. Taking the adjusted regrade requests rates in b to be multiplied by the conditional upward graded change rate in a, the average upward grade change rate is 7.16% during semester (11.6% x 61.6%) and 1.97% at the end of semester (=6.28% x 31.4%).

Appendix A4. Laboratory Experiment (link of screenshots)

Experiment Consent

Purpose: The purpose of the experiment and survey is to understand students' course experiences. This study includes 7 experimental tasks and a survey. It takes approximately 60 minutes of your time to complete both the experiment and the survey. Assistant Professor Dr. Hsueh-Hsiang Li of the Department of Economics at Colorado State University is conducting this study.

Eligibility: If you are an undergraduate student who are 18 years or older, are currently enrolled at Colorado State University, and have completed at least three courses with letter grades at Colorado State University in the last 5 years, you are eligible to participate in this study.

Participation: Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop your participation at any time without penalty. For this study, we will collect information about yourself and the courses you have taken.

Payment: You will receive a guaranteed $5 for your participation (after completing both the experiment and the survey). In addition, you may earn up to an additional $29 depending on your performance/choices in the experimental tasks. There are 7 tasks in the experiment. The minimum payment is **$5** and the maximum payment is **$34**. An average participant earns an approximately total payment of **$20**.

For Tasks 1, 2 and 5, you will be paid based on your performance in each of the tasks. The possible payment for these three tasks combined is between $0 and $24.

You can earn an additional payment between $0 and $5 based on your performance on Tasks 3, 4, 6, and 7. At the end of the session, the computer will randomly select **one** of these 4 tasks and pay you your earnings in that task. Since you will not know which of the tasks from Tasks 3, 4, 6, and 7 has been selected for payment until the end of the study, you should treat each task as if you will receive payments for it.

The payment will be made in Ram Cash and be directly deposited to your Ram Account by the end of June in 2019.

In addition to the payment (between the minimum $5 and the maximum $34) mentioned above, participants who complete the survey and provide the required information for payments (CSU student ID, name, and valid email information) will also automatically enter a lottery drawing for a chance to win 1 out of 10 prizes of a $100 Ram Cash which will be directly deposited to the winners' Ram Accounts by the end of June in 2019. Each eligible participant has the same chance of winning the lottery. Any duplicate entries of the survey by the same participant will be removed from the lottery drawing. Your name and CSU student ID number will be submitted to CSU financial departments for the payment purposes. Any names and emails associated with the survey will be removed from any other publications to protect participants' privacy. Other than the payment you receive from the participation, there is no other direct benefits or known risks associated with this research.

Questions? If you have any questions, please contact Dr. Hsueh-Hsiang Li at Hsueh-hsiang.li@colostate.edu or 970-491-6305. If you have any questions about your rights as a volunteer in this study, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu or 970-491-1553. The IRB Protocol ID for the study is 17-7489H.

Consent: By clicking "NEXT", you acknowledge that you have read the information stated and consent to participate in this study.

TASK 1

In the first task of the experiment, we would like to ask you about your preferences for different options of lottery choices.

Suppose there are two possible events A and B. There is a **50% chance for event A** to occur and a **50% chance for event B** to occur. Among the five lottery choices listed below, which one do you prefer the most?

Based on your choice, a lottery will be *randomly* drawn to decide whether event **A** or **B** occurs. You will then be paid for this task based on this random drawing and the lottery you choose. For example, if you choose the third option below, the computer will determine whether you receive $4 or $1.

6) 50% chance of event A of receiving $2 and 50% chance of event B of receiving $2.00.
7) 50% chance of event A of receiving $3 and 50% chance of event B of receiving $1.50.
8) 50% chance of event A of receiving $4 and 50% chance of event B of receiving $1.00
9) 50% chance of event A of receiving $5 and 50% chance of event B of receiving $0.50.
10) 50% chance of event A of receiving $6 and 50% chance of event B of receiving $0.00

TASK 2

In this task, you will be asked to answer **20 multiple choice questions**.

Each question will appear sequentially. You will have **45 seconds** to answer each question. Failing to answer a question within the time limit will result in an incorrect answer. After answering each question, you will be asked about the percent chance (or chances out of 100) that you think your answer is correct. This will tell us how confident you feel about your answer.

Your **payoff** will depend on your final score. You will only be informed of your score after you have answered ALL 20 questions. The more questions you answer correctly, the higher your payoff. The payoff rate for each correct answer is $0.50. In addition to the $0.50 payoff for each correct answer, you may earn an additional bonus payment as follows: $2 if you answered 6 – 10 questions correctly, $4 if you answered 11 – 15 questions correctly, and $6 if you answered 16 – 20 questions correctly.

This is the payoff table:

Number of correct answers	Payoff	Bonus	Total Payment
1	$0.50	$0.00	$0.50
2	$1.00	$0.00	$1.00
3	$1.50	$0.00	$1.50
4	$2.00	$0.00	$2.00
5	$2.50	$0.00	$2.50
6	$3.00	$2.00	$5.00
7	$3.50	$2.00	$5.50
8	$4.00	$2.00	$6.00
9	$4.50	$2.00	$6.50
10	$5.00	$2.00	$7.00
11	$5.50	$4.00	$9.50
12	$6.00	$4.00	$10.00
13	$6.50	$4.00	$10.50
14	$7.00	$4.00	$11.00
15	$7.50	$4.00	$11.50
16	$8.00	$6.00	$14.00
17	$8.50	$6.00	$14.50
18	$9.00	$6.00	$15.00
19	$9.50	$6.00	$15.50
20	$10.00	$6.00	$16.00

Example: If you answer 14 questions correctly, you will receive

Payoff = $0.50 × 14 = $7.00

Bonus = $4

Total compensation = Payoff + Bonus = $7.00 + $4 = $11.00

To ensure you correctly understand how your compensation (payoff + bonus) will be determined, please answer the following practice question.

Practice Question: What would your total compensation (i.e. payoff + bonus) be if you answered 16 questions correctly?

a) $11.50
b) $14.00
c) $14.50
d) $15.00

[Answer: b. Participants will not move on to the next page until they answer the practice question correctly.]

Additional payoff: For each of the 20 questions, you will be asked about your best guess of the chance that you think your answer is correct. You may earn up to an additional $1 for the guess you provide. The computer will randomly select **one** of the 20 questions to determine the additional payment. You will receive a larger proportion of this $1 additional payoff the more accurate your guess. For instance, if you think the chance your answer is correct is 100% and your answer is indeed correct, you will earn an additional $1. However, if you think the chance your answer is correct is 80% and your answer is indeed correct, you will earn $0.96. On the other hand, if you think the chance your answer is correct is 100% but your answer is actually wrong, you will earn $0. This formula was designed by economists (link). According to this formula, it is in your best interest to respond honestly.

Some of the questions require algebraic calculations. You may use a calculator to complete this task. When you are ready to answer the multiple-choice questions, please click the "Next" button below.

TASK 3

Guess: Before you are informed about the number of questions you answered correctly, you will be asked for your **guess** of the number of questions you answered correctly.

Payoff: You will be rewarded for the accuracy of your answer. The closer your guess is to the actual number of questions you answered correctly, the higher your payoff. This formula was designed by economists (link). According to this formula, it is in your best interest to respond honestly.

You will be able to earn as much as $5 for the accuracy of your guess.

Accuracy of your guess	**Payoff**
Completely accurate	$5.00
Your guess is off by 1 question	$4.50
Your guess is off by 2 questions	$3.00
Your guess is off by 3 questions	$0.50
Your guess if off by 4 or more questions	$0.00

Example: Suppose you *guess* that you answered **15** questions correctly, but you *actually* answered **16** questions correctly. Since your answer is one question short, you will receive $4.50 as the payoff for your guess.

Practice Question: What would be your guess payoff if you guess that you answered 14 questions correctly, but you actually only answered 11 questions correctly?

a) $5.00
b) $4.50
c) $3.00
d) $0.50
e) $0.00

[Answer: d. Participants cannot move on to the next page until they answer it correctly.]

Recall, at the end of the session, **ONE** of Tasks 3, 4, 6, or 7 will be picked by the computer at random to determine your payoff from these tasks.

Question: How many questions do you think you answered correctly? __Y___

_____

TASK 4

In the previous question, your guess of how many questions you think you answered correctly was Y. This question is designed to assess how confident you feel about your guess.

Payoff: As before, you will be able to earn as much as $5 for the accuracy of your guess. The more accurate you answer is, the more money you will get. This formula was designed by economists (link). According to this formula, it is in your best interest to respond honestly.

Recall, at the end of the session, **ONE** of Tasks 3, 4, 6, or 7 will be picked by the computer at random to determine your payoff from these tasks.

Question: What do you think is the percent chance (or chances out of 100) that the number of questions you answered correctly falls in each of the following bins. Please assign a number between 0 and 100 for each row. Your answers must **sum up to 100**.

Number of questions answered correctly	**Probability (between 0 and 100%)**
Y – 5 or less	
Between Y – 4 and Y – 2 questions	
Between Y – 1 and Y + 1 questions	
Between Y + 2 and Y + 4 questions	
Y + 5 or more	

[Y will be replaced by the number of correct answer guessed by the participant. An error message will pop up when the sum does not equal 100.]

TASK 5

You will now be informed of the number of questions you answered correctly.

You got **12(G)** out of **20** questions graded as *correct*.

Note that the computer **randomly** assigned a *correct* or *incorrect* to **THREE** of your answers. For each of the three randomly selected questions, if your answer is **correct**, there is a 1/3 chance that it is graded as correct and 2/3 chance that it is graded as incorrect. In contrast, if your answer is **incorrect**, there is a 2/3 chance that it is graded as incorrect and 1/3 chance that it is graded as correct. In other words, for these three questions, a **correct** answer has twice as much chance of being graded as incorrect (false outcome) than as correct (true outcome); an **incorrect** answer has twice as much chance of being graded as incorrect (true outcome) than as correct (false outcome).

To make sure you understand how the randomization works, please answer the two questions below.

Practice Question 1: Suppose a question was selected for a random grade assignment and your answer was actually **correct**, what is the chance it was graded as **incorrect**?

a) 1/3
b) 2/3
[answer: b. Participants cannot move on to the next page until they answer it correctly.]

Practice Question 2: Suppose a question was selected for a random grade assignment and your answer was actually **incorrect**, what is the chance it was graded as **correct**?

a) 1/3
b) 2/3
[answer: a. Participants cannot move on to the next page until they answer it correctly.]

As a result, there is some chance that the final score shown above is indeed your **accurate** score, but there is also some chance that the shown score is **lower** than your actual score, and some chance that the shown score is **higher** than your actual score. In fact, your actual score could be 9, 10, 11, 12, 13, 14, or 15. [The numbers are adjusted based on the first grade result.]

The following table shows how your answer for each of the questions was graded and the chance you thought your answer was correct in Task 2.

Questions	Your answer was grade as:	The chance (%) you thought the answer is correct
1.	Correct	80
2.	Incorrect	50
…	…	…

Recall that your payoff and bonus payment depend on the number of questions graded as correct.

You got **12(G)** questions graded as correct, your payoff is **$6.00** and your bonus is **$4.00**. Your current total compensation is **$10.00**.

You may request a regrade. In the case of a regrade, the THREE questions that were randomly assigned a score would be regraded accurately. If you **request a regrade**, the payoff, bonus, and total compensation associated with your potential regraded outcomes are as follows:

Number of correct answers	Payoff	Bonus	Total Compensation
9	$4.50	$2.00	$6.50
10	$5.00	$2.00	$7.00
11	$5.50	$4.00	$9.50
12	$6.00	$4.00	$10.00
13	$6.50	$4.00	$10.50
14	$7.00	$4.00	$11.00
15	$7.50	$4.00	$11.50

However, in order to make a regrade request, you must pay a cost. There are **10** possible values for the cost of asking for a regrade, ranging from **having to pay $3.50** to **getting paid $1**.

For **EACH** of the following costs of regrade, you will have to choose whether you would like to request a regrade or not.

If you choose **"Request Regrade"**, you will pay the associated cost (which will be deducted from your compensation) and the three randomly chosen questions will be **regraded** accurately. Remember, there is a chance that the original grade is correct and your final grade will **not be changed**. But there is also a chance that the regraded result is **better** or **worse** than the initial grade.

If you choose **"Do Not Request Regrade"**, the **score above** will be your final score, and you be compensated based on that.

After you have made a choice for each the scenarios, ONE of them will be *randomly* chosen to determine your cost and the final grade.

If you ask for a regrade, you pay $3.5	Request Regrade	Do not Request Regrade
If you ask for a regrade, you pay $3	Request Regrade	Do not Request Regrade
If you ask for a regrade, you pay $2.5	Request Regrade	Do not Request Regrade
If you ask for a regrade, you pay $2	Request Regrade	Do not Request Regrade
If you ask for a regrade, you pay $1.5	Request Regrade	Do not Request Regrade
If you ask for a regrade, you pay $1	Request Regrade	Do not Request Regrade
If you ask for a regrade, you pay $0.5	Request Regrade	Do not Request Regrade
If you ask for a regrade, you pay $0	Request Regrade	Do not Request Regrade
If you ask for a regrade, you GET PAID $0.5	Request Regrade	Do not Request Regrade
If you ask for a regrade, you GED PAID $1	Request Regrade	Do not Request Regrade

TASK 6

Before the regrade result is reveal, we would like to ask you again about your guess of the number of questions you answered correctly.

Recall that you got **12** out of **20** questions graded as *correct* initially. Also recall that the computer **randomly** assigned a *correct* or *incorrect* to **THREE** of your answers.

As a result, there is some chance that the score shown above is indeed your **accurate** score, but there is also some chance that the shown score is **lower** than your actual score, and some chance that the shown score is **higher** than your actual score. In fact, your actual number of correct answer could be 9, **10, 11, 12, 13, 14, 15**.

We will AGAIN ask you about your guess of the number of questions you answered correctly after you learned the grade information above.

Payoff: As before, you will be rewarded for the accuracy of your answer. The closer your guess is to the actual number of questions you answered correctly, the higher your payoff. You will be able to earn as much as $5 as follows:

Accuracy of your guess	**Payoff**
Completely accurate	$5.00
Your guess is off by 1 question	$4.50
Your guess is off by 2 questions	$3.00
Your guess is off by 3 questions	$0.50
Your guess if off by 4 or more questions	$0.00

The more accurate your answer is, the more money you will earn. This formula was designed by economists (link). According to this formula, it is in your best interest to respond honestly. Recall, at the end of the session, **ONE** of Tasks 3, 4, 6, or 7 will be picked by the computer at random for determining your payoff from these tasks.

Questions: Earlier you thought you had answered Y [answer to task 2] questions correctly. How many questions do you think you answered correctly now?
_____(Z)_____

TASK 7

Recall that you got 12 out of 20 questions graded as correct initially. Also, recall that the computer randomly assigned a *correct* or *incorrect* to THREE of your answers. As a result, your actual number of correct answers could be 9, 10, 11, 12, 13, 14, or 15.

In the previous question, the number of questions you think you answered correctly was Z. The next question is designed to assess how confident you feel about your guess.

Payoff: As before, you will be able to earn as much as $5 for the accuracy of your guess. The more accurate you answer is, the higher your payoff. This formula was designed by economists (link). According to this formula, it is in your best interest to respond honestly.
Recall, at the end of the session, **ONE** of Tasks 3, 4, 6, or 7 will be picked by the computer at random for determining your payoff from these tasks.

Question: What do you think is the percent chance (or chances out of 100) that the number of questions you answered correctly falls in each of the following bins. Please assign a number between 0 and 100 for each row. Your answers must **sum up to 100**.

Number of questions answered correctly	**Probability (between 0 and 100%)**
9 (G – 3)	
10 (G – 2)	
11 (G – 1)	
12 (G)	
13 (G + 1)	
14 (G + 2)	
15 (G + 3)	

[G will be replaced by the number of correct answer guessed by the participant. An error message will pop up when the sum does not equal 100.]

Survey

This concludes the experiments. Now we move to the survey component of the study.
[Insert the survey component (remove the lottery choice question and survey introduction) here.]

Results

Thank you for participating! We will now inform you about your payoff from the experiments.

In Task 1, your lottery choice is "A: 50% chance of receiving $\$L_A$; B: 50% chance of receiving $\$L_B$", and the random event drawn was A/B. As a result, your lottery payment for Task 1 is $L.

In Task 2, the number of your answers initially graded as correct was G.

In Task 5, the random scenario chosen for a regrade request would cost you C (or get you paid C), and you decided to Request Regrade/Not to Request Regrade and hence you paid/get paid C_f regrade cost. The final number of your answers graded as correct is W. Hence, you earned the payoff of $P and the bonus of $B for Task 2. You had to pay (or get paid) C_f as the cost of regrade for Task 5.

In Task 2, the randomly selected question for the additional payoff is #, and the percent chance you thought your answer was correct was %. Your answer was correct/incorrect. You earned an additional payoff $$ for the guess.

The number of questions that you ***actually*** answered correctly was X. In Task 3, your guess of the number of questions you answered correctly was G1. In Task 4, your probability guess for the true event to occur was Pr1. In Task 6, your guess of the number of questions you answered correctly was G2. In Task 7, your probability guess for the true event to occur was Pr2. The computer randomly chose Task # for payment. Hence, the bonus payment for your guess is B.

You also earned a guaranteed $5.00 for participation.

Your total payment is therefore $$$. The payment will be directly deposited to your Ram Account by the end of the spring semester in 2019.

The 10 prizes of the award of $100 Ram Cash will be drawn by the end of June in 2019. The winners will be notified via the email provided by the participants in the survey, and the payment will be directly deposited to the winners' Ram Accounts.

Thank you for your participation in the study.

This concludes the 7 experimental tasks and survey of the study. You may close the window now.

Appendix A5. Upper bound of GPA implication from Student Survey

To calculate the implication of regrade requests on GPA, we need to take into account the distribution of requests as well as the magnitude and the distribution of grade changes conditional on requests. We calculate the upper bound of the unconditional and conditional effects of regrade requests on GPA by gender as follows.

Unconditional upper bound:

$$\sum_t \left\{ Pr(D_t = 1) \times (Frac_t | D_t = 1) \times \left[\sum_s Pr(O_{st} | D_t = 1) \times \Delta G_{ts} \right] \right\}$$

.

Conditional upper bound:

$$\sum_t \left\{ (Frac_t | D_t = 1) \times \left[\sum_s Pr(O_{st} | D_t = 1) \times \Delta G_{st} \right] \right\}$$

.

- $Pr(D_t = 1)$ is the percentage of students who asked for regrade (D is a dummy variable for regrade request) at time $t \in \{mt, fn\}$ where mt denotes the time during the semester and fn denotes the time at the end of semester;
- $(Frac_t | D_t = 1)$ denotes the fraction of classes in which students asked for regrades at time t conditional on asking;
- $Pr(O_{st} | D_t = 1)$ is the percentage of students receiving a grade outcome O in scenario $s \in \{u, d, n\}$, with u as a upward grade change, d as a downward grade change, and n as no change at all during time t;
- ΔG_{st} is the numerical value of the grade change by scenario s conditional on asking at time t.

The term inside the bracket calculates the expected grade point change in a class where a student asks for a regrade by weighting three potential outcomes using the empirical distribution of these outcomes from the survey (i.e, the percentage of participants receiving a better grade, a worse grade, or no grade change following their regrade request). This calculation is conducted to grade changes during and at the end of semester separately, and the summation of these changes provides the cumulative grade changes throughout the semester. To calculate how such a grade change impacts a person's overall GPA, the grade change needs to be adjusted by the relative frequency of such requests (i.e., the fraction of classes in which students actually make such requests, $(Frac_t | D_t = 1)$) because students do not make such a request in every class they take. With this adjustment, we are able to calculate the GPA change for students who ever made regrade requests (i.e., conditional on asking). Finally, in order to calculate the unconditional GPA implication for the underlying population as a whole, we need to take the conditional GPA implication and multiply it by the percentage of students who ever made regrade requests to arrive at the unconditional measure. Note that $(Frac_t | D_t = 1 = 0)$ and $\Delta G_{st} = 0$ for students who never asked for regrades and hence the expected grade change for them drops out from the equation.

Note that $Pr(D_t = 1)$ and $Pr(O_{st} | D_t = 1)$ are directly calculated based on participants' responses in the Student Survey. However, $Frac_t | D_t = 1$ and ΔG_{st} are not directly available from the survey. The survey elicited the number of classes in which students ever considered for regrade requests. However, the value is truncated at 5 (i.e., 5 or more). Therefore, we do not observe the true number of classes students considered for regrade requests. Furthermore, we only collected information on whether students actually asked for regrades in no more than 3 classes, and we do not have information on the number of classes a student had taken. Given that freshmen only completed their course work of one semester at the time of the survey and hence are unlikely to be censored by the survey construction, we calculate the fraction of courses freshmen asked for regrades out of three courses as the proxy measure for $(Frac_t | D_t = 1)$.

To calculate ΔG_{st}, we need the numerical values of grade changes. We are able to convert the change in letter grades to numerical values as a result of regrade requests at the end of semester, but we are unable to precisely pin down the magnitudes of grade component increases and decreases during the semester. Therefore, we take participants' responses on either the grade component increased, decreased, or remained unchanged as a result of their regrade requests during the semester, and assume that the numerical values of such changes are proportional to the magnitude of changes in letter grades at the end of the semester. Summing over the grade changes during the semester and at the end of the semester gives us the cumulative grade change in a class conditional on asking. The GPA implications are calculated separately for males and females based on their respective empirical distributions from the survey.

Appendix B1. Gender Differences in Regrades by College

College	% Grade Records	% Female in College	% Positive Change			% Negative Change		
			Female	Male	Difference	Female	Male	Difference
Agriculture	4.5	58.3	0.487	0.296	0.191***	0.009	0.004	0.005
			(6.963)	(5.437)	[0.053]	(0.927)	(0.633)	[0.007]
Business	10.8	42.9	0.404	0.500	-0.096***	0.005	0.002	0.002
			(6.343)	(7.056)	[0.036]	(0.696)	(0.492)	[0.003]
Engineering	4.8	20.6	0.397	0.491	-0.094	0.015	0.043	-0.028
			(6.289)	(6.991)	[0.067]	(1.224)	(2.070)	[0.019]
Human Science	12.6	66.1	0.503	0.557	-0.054	0.041	0.124	-0.083***
			(7.074)	(7.445)	[0.037]	(2.032)	(3.525)	[0.014]
Liberal Arts	32.2	55.8	0.421	0.538	-0.116***	0.015	0.025	-0.010**
			(6.479)	(7.315)	[0.021]	(1.222)	(1.569)	[0.004]
Natural Resources	4.6	40.9	0.426	0.498	-0.071	0.008	0.005	0.002
			(6.516)	(7.038)	[0.056]	(0.889)	(0.740)	[0.007]
Natural Sciences	23.3	53.2	0.325	0.430	-0.105***	0.032	0.029	0.003
			(5.693)	(6.543)	[0.022]	(1.786)	(1.694)	[0.006]
Veterinary	3.4	68.5	0.336	0.338	-0.001	0.006	0.014	-0.007
			(5.791)	(5.803)	[0.058]	(0.797)	(1.174)	[0.009]
Intra-University	3.9	60.3	0.293	0.228	0.066	0.000	0.015	-0.015**
			(5.408)	(4.767)	[0.046]	(0.000)	(1.206)	[0.007]

* $p<0.10$, ** $p<0.05$, *** $p<0.01$. Standard deviations in parentheses. Standard errors in squared brackets.

Appendix B2. Alternative Linear Probability Regression Analysis of Administrative Data

Dependent variable: Upward grade change Y$\in \{0,1\}$, mean $\bar{Y} = .439\%$	[3]	[4]	[5]	[6]
A. Gender interactions				
Male student	0.0476***	0.0335*	0.0460**	0.0331*
	(0.0184)	(0.0185)	(0.0185)	(0.0182)
Male instructor	-0.0028	-0.0611***	-0.0268	-0.0353**
	(0.0166)	(0.0234)	(0.0166)	(0.0168)
Male student x Male instructor	0.0374	0.0237	0.0579**	0.0690***
	(0.0244)	(0.0247)	(0.0243)	(0.0241)
B. Percent Female in Class				
Male student	0.2394***	0.2254***	0.2952***	0.3219***
	(0.0406)	(0.0438)	(0.0406)	(0.0399)
Percent Female in Class	-0.1175**	0.0344	-0.0307	0.0328
	(0.0574)	(0.0809)	(0.0572)	(0.0563)
Male student x Percent Female in Class	-0.3718***	-0.3454***	-0.4511***	-0.5079***
	(0.0711)	(0.0774)	(0.0710)	(0.0700)
C. Qauntitative Classes[a]				
Male student	0.0564***	0.0492***	0.0566***	0.0484***
	(0.0161)	(0.0160)	(0.0162)	(0.0161)
Quantitative Class	-0.0880*	0.3204	-0.3487***	0.0000
	(0.0503)	(0.2132)	(0.0505)	
Male student x Quantitative Class	0.0332	-0.0070	0.0598**	0.0638**
	(0.0258)	(0.0261)	(0.0257)	(0.0257)
D. Lenient Instructors[b]				
Male student	0.0554***	0.0427***	0.0644***	0.0598***
	(0.0121)	(0.0122)	(0.0123)	(0.0122)
Lenient Instructor	15.2569***	16.2787***	15.1263***	14.4265***
	(0.9132)	(0.9362)	(0.9075)	(0.8635)
Male student x Lenient Instructor	1.7076	1.4159	1.6573	1.4062
	(1.2592)	(1.2124)	(1.2515)	(1.1918)
Student controls[c]	No	No	Yes	Yes
Class controls[d]	Yes	No	Yes	Yes
Class fixed effects	No	Yes	No	No
GPA $\times$ Grade $\times$ Dept[e]	No	No	No	Yes

This table replicates Columns 3-6 of Table 2 with alternative specifications.

Coefficients and standard errors are multiplied by 100 to be read as percentage points.

$*p < 0.1; * * p < 0.05; * * *p < 0.01$. Standard errors are clustered at the student level and reported in parentheses.

a. *Quantative Class* is an indicator for departments that list mathematics as a very important requirement for first-year majors, and it includes most natural sciences, engineering and economics departments.

b. *Lenient Instructor* is an indicator for instructors who made more than 10 percent changes in their cumulative grade entries.

c. Student controls include: student's class standing (i.e., freshman, sophomore, junior, senior), discretized GPA (corresponds to letter grades), and initial grade.

d. Class controls include: college, department, instructors' gender and rank.

e. GPA $\times$ Grade $\times$ Dept includes 4,500 indicators for the full interactions of discretized GPAs (corresponds to letter grades), initial grades, and departments.

Appendix B3. Reasons of asking/not asking for regrades from the student survey

	Female	Male	Difference
A. Why asked?			
Why: grading errors	16.86	19.67	-2.81
	(37.46)	(39.78)	[1.95]
Why: lower than usual grade	3.99	2.19	1.81**
	(19.59)	(14.63)	[0.92]
Why: close to a higher grade	9.45	7.65	1.80
	(29.26)	(26.60)	[1.45]
Why: below major requirement	2.11	1.60	0.51
	(14.39)	(12.56)	[0.70]
Why: causes probation	0.77	0.35	0.42
	(8.73)	(5.92)	[0.40]
Why: disqualifies financial aid	0.65	0.74	-0.09
	(8.06)	(8.59)	[0.42]
Why: grade prevents graduation	1.38	0.35	1.03**
	(11.68)	(5.92)	[0.52]
Why: I deserve a better grade	13.23	10.81	2.42
	(33.90)	(31.08)	[1.68]
Why: instructor is lenient	1.63	0.82	0.81
	(12.68)	(9.02)	[0.59]
Why: doesn't hurt to ask	15.21	12.61	2.60
	(35.93)	(33.22)	[1.78]
B. Why did not ask?			
Why not: grades correct	22.35	19.67	2.68
	(41.68)	(39.78)	[2.09]
Why not: grades fair	27.07	26.23	0.84
	(44.45)	(44.02)	[2.26]
Why not: grades expected	16.94	18.27	-1.33
	(37.52)	(38.67)	[1.93]
Why not: would never change	24.75	20.10	4.65**
	(43.18)	(40.11)	[2.15]
Why not: fear of rejection	24.40	15.89	8.52***
	(42.97)	(36.58)	[2.09]
Why not: too stressful	29.57	20.96	8.61***
	(45.66)	(40.74)	[2.24]
Why not: fear of punishment	12.85	9.33	3.52**
	(33.47)	(29.11)	[1.63]
Why not: never thought of it	12.21	10.54	1.67
	(32.76)	(30.73)	[1.63]
Number of students	868	427	

*<$0.10; **<$0.05, ***<$0.01. Standard deviations are in parentheses. Standard errors are in square brackets. Summary statistics are inversely weighted by the number of class observations so individual participants are equally weighted. For example, if a student considered asking for regrades in 3 classes, each class observation has a weight that is 1/3. If a student only considered asking for regrades in 0 or 1 class, the weight of the single observation is 1.

Appendix B4. Logit Regression of Willingness to Pay a Positive Cost for Regrades, all observations

	Dependent Variable: $I_{WTP>\$0} \in \{0,1\}$ for regrades, E[I] = 0.44									
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Male student	0.103**	0.090**	0.088**	0.085**	0.078*	0.082*	0.086**	0.077*	0.075	0.066
	(0.042)	(0.043)	(0.044)	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)	(0.046)	(0.046)
True score		0.009	0.009	0.007	0.004	0.010	0.002	0.008	0.010	0.009
		(0.007)	(0.007)	(0.007)	(0.007)	(0.009)	(0.011)	(0.015)	(0.007)	(0.015)
Risk aversion[a]			-0.010					-0.008		-0.008
			(0.028)					(0.028)		(0.028)
Over-confidence[b]				0.350***				0.236*		0.238*
				(0.110)				(0.132)		(0.133)
Under-confidence[c]					-0.431***			-0.134		-0.133
					(0.150)			(0.181)		(0.182)
Over-optimism[d]						0.014*		0.009		0.009
						(0.008)		(0.010)		(0.010)
Uncertainty[e]						-0.294*		-0.269		-0.264
						(0.164)		(0.166)		(0.166)
Prior downside risk[f]						0.029		0.047		0.043
						(0.162)		(0.164)		(0.164)
Posterior guessed score							0.006	-0.005		-0.005
							(0.012)	(0.013)		(0.013)
Posterior downside risk[f]							-0.134	0.006		0.015
							(0.089)	(0.099)		(0.099)
Extroversion[g]									0.014	0.013
									(0.023)	(0.023)
Agreeableness[g]									-0.009	-0.013
									(0.025)	(0.025)
Conscientiousness[g]									-0.003	-0.011
									(0.027)	(0.027)
Neuroticism[g]									-0.017	-0.011
									(0.023)	(0.023)
Openness[g]									-0.014	-0.013
									(0.024)	(0.024)
Observations	563	563	563	562	563	563	563	562	563	562
F-test (p-value): all coefficients (other than Male student, true score, and constant) = 0								.0226	.887	.124

* p<0.1; ** p<0.05; *** p<0.01. Standard errors are reported in the parentheses. a. Risk aversion measures the risk aversion coefficient. b. *Over-confidence* measures participants' probability assignments to the *wrong* answers in the quiz (0 = zero over-confidence to 1 = completely over-confident). c. *Under-confidence* measures the gap (between 0 and 1) between participants' probability assignments and 1 (100\%) of the *correct* answers in the quiz (0 = zero under-confidence to 1 = completely under-confident). d. Over-optimism measures the gap between participants' guessed score (prior belief) and true score of the quiz. e. Uncertainty measures how certain (in probability) they are about their guessed outcome (0 = completely certain to 1 = completely uncertain). f. Prior (posterior) downside risk measures the prior (posterior) probability (between 0 and 1) participants assigned to adverse outcomes (i.e., true score is below the guessed score). g. Extroversion, Agreeableness, Conscientiousness, Neuroticism, Openness are the Big Five personal traits with the value ranging between 1 and 5.

Appendix B5. OLS Regression Analysis of Gender Differences in WTP ($), all observations

	Dependent Variable: WTP ($), E[WTP] = 0.234									
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Male student	0.193*	0.090**	0.173	0.174	0.152	0.155	0.166	0.130	0.173	0.138
	(0.113)	(0.043)	(0.117)	(0.115)	(0.115)	(0.115)	(0.115)	(0.116)	(0.124)	(0.124)
True score		0.009	0.002	-0.000	-0.013	0.017	-0.048	-0.031	0.007	-0.028
		(0.007)	(0.019)	(0.019)	(0.019)	(0.023)	(0.030)	(0.040)	(0.019)	(0.040)
Risk aversion[a]			-0.074					-0.062		-0.061
			(0.076)					(0.076)		(0.077)
Over-confidence[b]				0.930***				0.445		0.440
				(0.301)				(0.358)		(0.362)
Under-confidence[c]					-1.299***			-0.492		-0.463
					(0.389)			(0.473)		(0.480)
Over-optimism[d]						0.057**		0.022		0.023
						(0.022)		(0.026)		(0.026)
Uncertainty[e]						-0.322		-0.189		-0.171
						(0.439)		(0.444)		(0.447)
Prior downside risk[f]						-0.368		-0.183		-0.210
						(0.426)		(0.432)		(0.435)
Posterior guessed score							0.049	0.025		0.026
							(0.032)	(0.035)		(0.035)
Posterior downside risk[f]							-0.717***	-0.428		-0.419
							(0.237)	(0.264)		(0.267)
Extroversion[g]									0.058	0.058
									(0.063)	(0.062)
Agreeableness[g]									-0.016	-0.017
									(0.069)	(0.068)
Conscientiousness[g]									0.037	0.020
									(0.073)	(0.074)
Neuroticism[g]									-0.016	0.019
									(0.061)	(0.061)
Openness[g]									-0.026	-0.023
									(0.065)	(0.064)
Observations	563	563	563	562	563	563	563	562	563	562
F-test (p-value): all coefficients (other than Male student, true score, and constant) = 0								.002	.883	.021

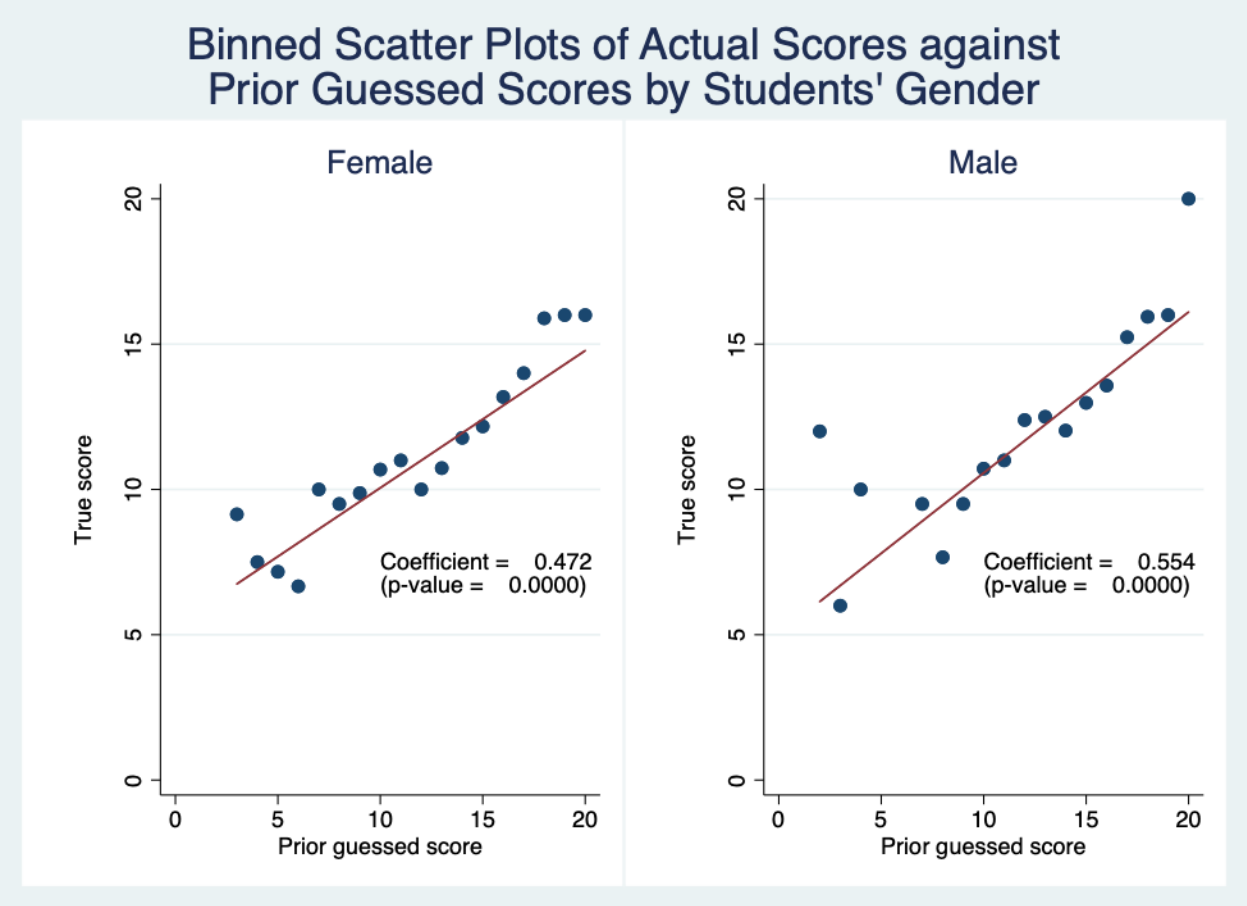
* p<0.1; ** p<0.05; *** p<0.01. Standard errors are reported in the parentheses. a. Risk aversion measures the risk aversion coefficient. b. *Over-confidence* measures participants' probability assignments to the *wrong* answers in the quiz (0 = zero over-confidence to 1 = completely over-confident). c. *Under-confidence* measures the gap (between 0 and 1) between participants' probability assignments and 1 (100\%) of the *correct* answers in the quiz (0 = zero under-confidence to 1 = completely under-confident). d. Over-optimism measures the gap between participants' guessed score (prior belief) and true score of the quiz. e. Uncertainty measures how certain (in probability) they are about their guessed outcome (0 = completely certain to 1 = completely uncertain). f. Prior (posterior) downside risk measures the prior (posterior) probability (between 0 and 1) participants assigned to adverse outcomes (i.e., true score is below the guessed score). g. Extroversion, Agreeableness, Conscientiousness, Neuroticism, Openness are the Big Five personal traits with the value ranging between 1 and 5.

Appendix B6. OLS Regression Analysis of Gender Differences in WTP ($), removing irrational observations

	Dependent Variable: WTP ($), E[WTP] = 0.141									
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Male student	0.194*	0.159	0.144	0.147	0.128	0.120	0.131	0.098	0.134	0.098
	(0.115)	(0.118)	(0.119)	(0.117)	(0.117)	(0.116)	(0.116)	(0.117)	(0.126)	(0.125)
True score		0.025	0.023	0.021	0.008	0.043*	-0.038	-0.011	0.025	-0.009
		(0.019)	(0.019)	(0.019)	(0.019)	(0.023)	(0.030)	(0.041)	(0.019)	(0.041)
Risk aversion[a]			-0.069					-0.067		-0.071
			(0.078)					(0.077)		(0.078)
Over-confidence[b]				0.930***				0.451		0.478
				(0.304)				(0.357)		(0.361)
Under-confidence[c]					-1.208***			-0.213		-0.186
					(0.399)			(0.482)		(0.488)
Over-optimism[d]						0.071***		0.034		0.035
						(0.023)		(0.027)		(0.027)
Uncertainty[e]						-0.374		-0.320		-0.292
						(0.441)		(0.447)		(0.450)
Prior downside risk[f]						-0.470		-0.263		-0.301
						(0.439)		(0.448)		(0.452)
Posterior guessed score							0.063**	0.035		0.034
							(0.032)	(0.035)		(0.035)
Posterior downside risk[f]							-0.760***	-0.409		-0.398
							(0.243)	(0.271)		(0.274)
Extroversion[g]									0.027	0.035
									(0.064)	(0.064)
Agreeableness[g]									-0.046	-0.051
									(0.069)	(0.068)
Conscientiousness[g]									0.038	0.026
									(0.075)	(0.075)
Neuroticism[g]									-0.028	0.017
									(0.062)	(0.062)
Openness[g]									-0.025	-0.026
									(0.066)	(0.065)
Observations	516	516	516	515	516	516	516	515	516	515
F-test (p-value): all coefficients (other than Male student, true score, and constant) = 0								.0004	.921	.006

* p<0.1; ** p<0.05; *** p<0.01. Standard errors are reported in the parentheses. a. Risk aversion measures the risk aversion coefficient. b. *Over-confidence* measures participants' probability assignments to the *wrong* answers in the quiz (0 = zero over-confidence to 1 = completely over-confident). c. *Under-confidence* measures the gap (between 0 and 1) between participants' probability assignments and 1 (100\%) of the *correct* answers in the quiz (0 = zero under-confidence to 1 = completely under-confident). d. Over-optimism measures the gap between participants' guessed score (prior belief) and true score of the quiz. e. Uncertainty measures how certain (in probability) they are about their guessed outcome (0 = completely certain to 1 = completely uncertain). f. Prior (posterior) downside risk measures the prior (posterior) probability (between 0 and 1) participants assigned to adverse outcomes (i.e., true score is below the guessed score). g. Extroversion, Agreeableness, Conscientiousness, Neuroticism, Openness are the Big Five personal traits with the value ranging between 1 and 5.

Appendix C1. Binned Scatter Plots of Actual Scores against Prior Guessed Scores, by Students' Gender



Appendix C2. Distribution of WTP Relative to Optimal Level under Perfect Foresight by Students' Gender