

## Analysis Plan

### Reject or Revise: Gender Differences in Persistence and Publishing

#### 1. Introduction

##### 1.1 Abstract

Many papers have documented a persistent gender gap in the economics profession and in other STEM fields, more generally. Women author fewer research publications and are underrepresented in tenured and full professor faculty positions in higher education.<sup>1</sup> Previous literature has pointed to various mechanisms to explain the gender gap, including differential family roles and responsibilities, number of children, pure gender discrimination, and institutional policies. In this study, we propose a new mechanism: gender differences in reactions to editorial decisions in the publication process. This mechanism is motivated by past research that has found that men and women respond differently to feedback when making decisions. We hypothesize that women are more likely to attribute negative feedback on submissions to the quality of the paper, discounting the random element in editorial and referee matches. Specifically, we hypothesize that women will be more likely to get discouraged by the negative feedback and the ambiguity associated with a reject and resubmit decision, relative to a revise and resubmit decision, conditional on the quality of the paper and other factors, such as the timing of the next significant job evaluation and research expectations at the current institution. Similarly, we hypothesize that women are more negatively affected by rejections than men. Therefore, we hypothesize that women will hold more pessimistic beliefs about their submissions' future prospects, conditional on quality, than otherwise comparable men, and will be less willing to submit rejected papers and future papers of similar quality to the same or similar ranked journals. Our results will have important implications for understanding gender gaps in the economics profession, academia, and beyond, and will shed light on the aspects of the peer review and editorial decision-making process that may have significant impact on gender gaps in academia.

##### 1.2 Motivation

There is large and growing literature documenting the underrepresentation of women in the economic profession and in other STEM fields of academia (Ceci et al. 2014). According to the Committee on the Status of Women in the Economics Profession, women represent only 29% of economics assistant professors in the U.S., 23% of tenured associate professors and 14% of full professors in 2017.<sup>2</sup> Furthermore, over the last 60 years, across all disciplines, only 27% of research publications were authored by women and only 17% of the economics papers published in the top-5 academic journals have female authors.<sup>3</sup>

Previous work has pointed to various mechanisms for the persistence of this gender gap in the academic profession, including differential family responsibilities (Cheng 2020), institutional policies (Antecol et al. 2018), and pure discrimination (Wu 2018). This study contributes to the literature by proposing a novel mechanism to explain the persistent gender gap in academia: gender differences in reactions to editorial decisions in the publication process.

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<sup>1</sup> <https://review.chicagobooth.edu/economics/2019/article/why-are-there-so-few-women-economists> and <https://www.brookings.edu/blog/brown-center-chalkboard/2019/03/29/though-more-women-are-on-college-campuses-climbing-the-professor-ladder-remains-a-challenge/>

<sup>2</sup> <https://thetseconomist.com/2020/01/15/the-underrepresentation-of-women-in-economics/>

<sup>3</sup> <https://www.yahoo.com/now/only-17-studies-published-top-154512069.html>

Significant attention in the experimental literature has been dedicated to the investigation of how individuals respond to feedback in terms of changing their beliefs (for example, Eil and Rao 2011; Buser et al. 2016; and Coffman et al. 2019) and how this translates into the decision to persist in competition, particularly in male-stereotyped settings (Ertac and Szentes 2011; Brandts et al. 2014; Wozniak et al., 2014; Berlin and Dargnies 2016; Buser and Yuan 2019; Shastry et al. 2020). Moreover, men and women respond differently to feedback when making decisions to enter competition (Niederle and Vesterlund, 2007; Shurchkov and Eckel, 2018) or choosing majors as well as occupations (Goldin, 2017; Blau and Kahn, 2016). However, so far, much of the literature has focused on laboratory and online experiments, where the task and the environment have been highly stylized. In this study, we aim to investigate the effects of negative feedback on men and women in the more realistic high-stakes setting of academic publishing. In previous work, Shastry et al. (2020) show that women attribute negative feedback more to their own ability than men, even when the negative feedback is partly due to noise. Gender differences in attribution of negative feedback in editorial decisions (partly driven by noise in referee or editor matches) may explain differences in publishing if, for example, women are less likely to submit rejected papers to other similarly ranked journals.

The recent emergence of a new type of editorial decision, “reject & resubmit,” adds to the urgency of this question. If, as anecdotal evidence suggests, these decisions are more or less equivalent to weak “revise & resubmit” decisions, and women are more discouraged by these decisions than men, conditional on paper quality, then the use of these decisions may exacerbate gender gaps in publishing.

### *1.3 Research Question*

The research question is whether there are gender differences in how women and men respond to negative editorial decisions.

## **2. Experimental Design**

### *2.1 Sample*

This study employs a survey experiment, and the participants will be academic researchers from all over the globe who have published at least one research article in an academic journal in economics or a related field (finance, for example) since 2000 and for whom we can find a publicly available email address. We collect the email addresses from publicly available sources including the articles, journal webpages, university webpages, or other public sources. We expect all our participants to be over 18 years of age and exclude those who have unsubscribed from the version of this email list used in Deryugina, Shurchkov & Stearns (2021). In total, there are approximately 43,000 addresses on the list.

### *2.2 Survey Description*

The survey has five sections: Consent, priming questions, encouragement screen, decision letter and short questions, and demographic questions. We will use Qualtrics to create the survey and distribute the survey. The duration is approximately 10 to 15 minutes.

In the consent section, participants will first be asked if they are currently in the European Economic Area (EEA). Subjects who reside in the EEA will be taken to a GDPR-compliant informed consent form, while all other subjects will see a standard informed consent form.

Subjects who consent will proceed to the priming question section where they will be asked baseline questions about their job and research activities. After these baseline questions,

respondents are asked to carefully read a sample letter from the editor of a top general interest journal who is writing with a decision on their hypothetical submission. At this point, respondents will be randomized into several treatment conditions which determine the wording of the letter. While the majority of the letter will be the same for all participants, the main treatment dimension is whether the editor concludes with a rejection of the submitted hypothetical manuscript, a rejection with an opportunity to still resubmit to the same journal, or a major revision request. The other treatment dimension is the number of times the paper has been rejected in the past (0 or 1 time). After reading one version of the editor letter, respondents will indicate what they would do next if they were to receive such a letter. They will also answer questions about their confidence in the success of this paper at this journal and more generally at other leading journals. The survey will end with standard demographic questions, including gender, race, ethnicity, country of birth and residence, and age. This section also includes questions about the approximate rank of their PhD institution and current institution. We will offer them the opportunity to provide a link to their website for us to glean this information, as well as their publication record, but this will be completely optional. The final screen will ask respondents for their email address if they would like to enter the lottery for a chance to win a prize of \$50 value. Entering the lottery is also completely optional.

### 2.3 Survey Questions

#### 2.3.1 Priming Questions: Control Variables

In this section of the survey, we collect variables that we will control for in the main analysis. People who consent will continue to this section where they will be asked baseline questions including PhD completion, year since obtained the PhD, discipline and fields of primary research, type of primary research institution, years worked at the primary institution, primary current rank or status, submission preference over journals for the most promising paper in the research portfolio, number of papers submitted to the preferred journal between March 2017 to March 2020, research expectation for the next promotion/review/job research, number of years until the next review, and the expected research standards.

#### 2.3.2 Decision Letter: Treatments

In this part of the survey, respondents will be shown a decision letter from the editor of a top general interest journal who is writing with a decision on their previously submitted hypothetical manuscript. Following is one sample decision letter and the texts in bold are randomized treatment conditions.

Think of a paper based on research that you consider particularly promising and representative of some of your best work to date. You submitted the paper to a top-5 general interest journal. **This is the first time you submitted this paper for publication.** You have received the following email from the Editor about three months after your submission:

*Dear XXXX,*

*Thank you for your submission. I have now heard from two referees and an Associate Editor on your paper, and I am sorry to say that the reviews are mixed. Both reviewers see merit in the paper, but have some concerns. R1 recommends rejection based on the somewhat limited contribution and some technical aspects. R2 suggests a weak revise and resubmit, commending the paper for its clever approach, but echoing R1's concerns that the paper is not the first to shed light on this*

*topic. The Associate Editor advises that, if a revision were to be pursued, it would have to be extensive, and the outcome would be uncertain.*

*After my own careful reading of the paper, I would like to offer you a reject and resubmit option.*

*Given the lukewarm referee reports, I am unable to make any promises about the eventual outcome at this time. We publish less than 5 percent of submissions so we have to pass on many good papers. If you choose to resubmit, please include a response to the referees' comments (see attached for detailed reports).*

Respondents will be randomized into 1 of the 6 treatment conditions which determines the wording of the letter. The randomization affects two dimensions: editorial decisions (reject & resubmit, revise & reject, flat rejection) and number of times the paper has been submitted previously (0 or 1 time). The following illustrates the details of the randomized dimensions.

#### Dimension 1: Decision

1. *[After my own careful reading of the paper, I would like to offer you a reject and resubmit option. Given the lukewarm referee reports, I am unable to make any promises about the eventual outcome at this time. We publish less than 5 percent of submissions so we have to pass on many good papers. If you choose to resubmit, please include a response to the referees' comments (see attached for detailed reports).]*
2. *[After my own careful reading of the paper, I would like to offer you a chance to revise and resubmit this paper. Given the lukewarm referee reports, I am unable to make any promises about the eventual outcome at this time. We publish less than 5 percent of submissions so we have to pass on many good papers. If you choose to resubmit, please include a response to the referees' comments (see attached for detailed reports).]*
3. *[After my own careful reading of the paper, I regret to inform you that I do not see a path to publication at this journal. We publish less than 5 percent of submissions so we have to pass on many good papers, including yours. Despite this disappointing news, I hope you continue to think of this journal as an outlet for your future scholarship.]*

#### Dimension 2: Number of times paper has been submitted previously

1. *This is the first time you submitted this paper for publication.*
2. *This is the second time you submitted this paper for publication; the paper was rejected once before at a similarly top-ranked journal.*

#### 2.3.3 Decision Letter Short Questions: Outcome Measures

After reading the decision letter, the respondent will be asked 5 or 6 questions related to the decision letter. The first question is Q1(a) if the decision is either “reject & resubmit” or “revise & resubmit” and Q1(b) if the decision is “rejection”.

Q1:

(a) Which course of action will you likely choose?

- *Revise based on the reports and resubmit to the same journal*
- *Revise based on the reports and submit to another journal of roughly equal rank*
- *Submit to another journal of roughly equal rank without making extensive revisions*
- *Revise based on the reports and submit to another journal ranked lower*
- *Submit to another journal ranked lower without making extensive revisions*

(b) Which course of action will you likely choose?

- *Revise based on the reports and email the editor of the same journal a response to the rejection*
- *Revise based on the reports and submit to another journal of roughly equal rank*
- *Submit to another journal of roughly equal rank without making extensive revisions*
- *Revise based on the reports and submit to another journal ranked lower*
- *Submit to another journal ranked lower without making extensive revisions*

Other questions are as following:

Q2:

After receiving this decision letter, how likely do you think it is that a revised version of this paper will eventually be published in this journal? (Use the slider below, with 0 indicating no chance that the paper will be published and 100 indicating that the paper will definitely be published.)

Q3:

After receiving this decision letter, how likely do you think it is that a revised version of this paper will eventually be published in a leading journal (i.e., top field or higher, including this specific one)? (Use the slider below, with 0 indicating no chance that the paper will be published and 100 indicating that the paper will definitely be published.)

Q4:

From about how many people would you solicit advice about next steps on this paper?

- *0, 1-3, 4-8, 9+*

Q5:

Based on the outcome of this submission, where would you choose to send your next paper of similar quality for the first submission?

- *a top-5 general interest journal*
- *a top-30 journal, outside of the top 5 (general interest or premier field journal)*
- *another field journal*
- *another general interest journal*
- *a non-peer reviewed outlet*

If the respondent chooses the first option for Q5, then he or she will be followed up with Q6.

Q6:

Would you be more likely to send your next paper of similar quality to this specific journal or another top-5 general interest journal?

- *more likely to send to this journal*
- *less likely to send to this journal*

- *indifferent between these journals*

Q1 measures how the participant expects to respond to the decision. For analysis, we will group together Options 1 to 3, indicating the willingness of submitting the paper to similar ranked journals, relative to Options 4 and 5. It is unclear whether revising extensively or not revising extensively indicates more confidence; we continue to offer the options in order to encourage participants to think through the decision carefully. Q2 and Q3 assess the respondent's confidence in their ability to publish the revised manuscript in the same journal as well as in other leading journals. Q5 and Q6 evaluate the participant's preference for their next submission of a new paper. In general, Q1 to 3 and Q5 to Q6 will allow us to determine whether men and women respond differently to the same editor letter in three different conditions: rejection, rejection with the ability to nevertheless resubmit the paper to the same journal, and an offer to revise and submit the paper. Q4 measures the strength of the participants' networks; we include this question to help get at mechanisms – women may respond differently because they solicit advice from fewer people.

#### 2.3.4 Demographic Questions: Background Measures and Heterogeneity Analysis

In the last part of the survey, we collect background measures of the participants for heterogeneity analysis. These variables include race, gender, ethnicity, country of birth and residence, age, marital status, number of kids, risk aversion, past “reject & resubmit” experience, approximate ranks of PhD and current institutions, and whether they have been an editor or associate editor. They will also be asked to share a link to their professional website if they are willing to (this is completely optional) so we can gather the exact rank of affiliated institutions, number of female faculty at those institutions (from CSWEP) and their publication history.

#### 2.3.5 Power Calculation

Assuming a 5% response rate from our initial email list of 43,000, we expect to have 2150 observations in total for approximately 350 in each treatment arm. Our initial piloting of the survey suggested a reasonable mean and standard deviation for the likelihood questions was 50 and 25, respectively. Thus, the smallest effect size we can detect with 80% power is 5.3 percentage points, approximately 0.2 standard deviations. In Shastry et al. (2020), we calculated a mean difference in confidence between men and women of 0.37 standard deviations. We also calculated that negative feedback reduced tournament entry for women by 30 percentage points relative to 20 percentage points for men. The standard deviation of tournament entry is about 0.5 making the gender difference in response to negative feedback approximately 0.2 standard deviations.

### 3. Hypotheses and Empirical Strategy

In this section, we lay out our hypotheses and the regressions we will run to test them.

**Hypothesis 1** *Conditional on years to next review, research standards at the next review and the number of previous rejections, the male-female gender gap in the perceived probability of success (publishing the paper in the same journal/in any top field or higher journal) will be greater for respondents who receive a reject & resubmit (RJR) than for respondents who receive a weak revise & resubmit (RVR).*

**Hypothesis 2** *Conditional on years to next review, research standards at the next review and the number of previous rejections, the male-female gender gap in the perceived probability of success (publishing the paper in the same journal/in any top field or higher journal) will be greater*

for respondents who receive a flat rejection (FR) than for respondents who receive a weak revise & resubmit (RVR).

Both hypotheses will be tested by the following OLS regression:

$$\begin{aligned} \text{Likelihood}_i = & \beta_0 + \beta_1 \text{female}_i + \beta_2 \text{RJR}_i + \beta_3 \text{FR}_i + \beta_4 \text{RJR}_i * \text{female}_i \\ & + \beta_5 \text{FR}_i * \text{female}_i + X' \gamma + \varepsilon_i \end{aligned} \quad (1)$$

where the outcome variable  $\text{Likelihood}_i$  represents the perceived probability of publishing the paper in the same journal or in any top journals, taking values between 0 and 100. The independent variable  $\text{female}_i$  is a dummy variable that takes the value of 1 for female and 0 for male.  $\text{RJR}_i$  is also a dummy variable that takes the value of 1 if the treatment condition is reject & resubmit (RJR) and 0 if the condition is flat rejection (FR) or revise & resubmit (RVR). Similarly,  $\text{FR}_i$  is a dummy variable that takes the value of 1 if the treatment condition is flat rejection and 0 if the condition is reject & resubmit or revise & resubmit. Moreover,  $X$  is a vector of controls including, but not limited to (1) years to next review, (2) type of next review, (3) research standards at the next review, (4) demographic characteristics, and (5) number of times the (hypothetical) paper has previously been rejected (0 or 1, randomly determined).

Holding constant  $X$ ,  $\beta_2$  is the difference in the perceived probability under RJR relative to RVR condition for men.  $\beta_3$  is the difference in the perceived probability under FR relative to RVR condition for men. We expect that  $\beta_3$  will be more negative than  $\beta_2$  since both decisions have equally the negative wording, but RJR provides the option value of resubmitting to the journal, while FR does not.  $\beta_4$  is the additional effect of receiving a RJR (relative to the baseline RVR) for women, relative to men. We expect  $\beta_4$  to be negative according to Hypothesis 1.  $\beta_5$  is the additional effect of receiving FR for women, relative to men. We expect  $\beta_5$  to be negative according to Hypothesis 2. We have no clear prediction about  $\beta_4$  relative to  $\beta_5$ ; we hypothesize that the finality of the FR decision will lead women to be more discouraged but the ambiguity of the RJR decision may also affect women's confidence more.

**Hypothesis 3** *Conditional on years to next review, research standards at the next review, and the editorial decision, the male-female gender gap in the perceived probability of success (publishing the paper in the same journal/in any top field or higher journal) will increase as the number of previous rejections increases.*

This hypothesis will be tested by the following OLS regression:

$$\begin{aligned} \text{Likelihood}_i = & \beta_0 + \beta_1 \text{NumPreviousRejections}_i + \beta_2 \text{female}_i + \\ & + \beta_3 \text{NumPreviousRejections}_i * \text{female}_i + X' \gamma + \varepsilon_i \end{aligned} \quad (2)$$

where the outcome variable  $\text{Likelihood}_i$  represents the perceived probability of publishing the paper in the same journal or in any top journals, taking values between 0 and 100.  $\text{NumPreviousRejections}_i$  is the number of previous rejections the paper has received (0 or 1, randomly assigned based on treatment). Furthermore,  $X$  is a vector of control variables including, but not limited to (1) years to next review, (2) type of next review, (3) research standards at the

next review, (4) demographic characteristics, and (5) the randomly assigned editorial decision outcome.

Holding constant  $X$ ,  $\beta_1$  is the change in the perceived probability of publishing when the number of previous rejections increases by 1 for men.  $\beta_2$  is the difference in the perceived probability of publishing for women relative to men who have received no prior rejections.  $\beta_3$  is the additional effect of having been previously rejected for women relative to men. We expect  $\beta_3$  to be negative according to Hypothesis 3.

**Hypothesis 4** *Conditional on years to next review, research standards at the next review and the number of previous rejections, whether or not the respondent would (re)submit the paper to a top-5 journal will follow the same pattern as the perceived probability of publishing the paper.*

**Hypothesis 5** *Conditional on years to next review, research standards at the next review and the editorial decision, whether or not the respondent would (re)submit the paper to a top-5 journal will follow the same pattern as the perceived probability of publishing the paper.*

We will test these hypotheses by grouping options 1-3 together for Q1 above, all of which indicate whether the respondent would submit the paper back to the same journal or another journal of roughly equal rank and estimating the following two regressions:

$$\begin{aligned}
 DV(\text{SubmitTop5}_i) &= \beta_0 + \beta_1 \text{female}_i + \beta_2 \text{RJR}_i + \beta_3 \text{FR}_i + \beta_4 \text{RJR}_i * \text{female}_i \\
 &+ \beta_5 \text{FR}_i * \text{female}_i + X + \varepsilon_i
 \end{aligned} \tag{4}$$

where we expect both  $\beta_4$  and  $\beta_5$  to be negative according to Hypothesis 4.

$$\begin{aligned}
 DV(\text{SubmitTop5}_i) &= \beta_0 + \beta_1 \text{NumPreviousRejections}_i + \beta_2 \text{female}_i + \\
 &+ \beta_3 \text{NumPreviousRejections}_i * \text{female}_i + X' \gamma + \varepsilon_i
 \end{aligned} \tag{5}$$

where we expect  $\beta_3$  to be negative according to Hypothesis 5.

**Hypothesis 6** *Conditional on years to next review, research standards at the next review and the number of previous rejections, willingness to submit future papers of similar quality to the same journal or a top-ranked general interest journal will follow the same pattern as the perceived probability of publishing the paper.*

This hypothesis will be tested by the following OLS regression:

$$\begin{aligned}
 DV(\text{Submit}_i) &= \beta_0 + \beta_1 \text{female}_i + \beta_2 \text{RJR}_i + \beta_3 \text{FR}_i + \beta_4 \text{RJR}_i * \text{female}_i \\
 &+ \beta_5 \text{FR}_i * \text{female}_i + X + \varepsilon_i
 \end{aligned} \tag{3}$$

where the outcome variable  $DV(\text{Submit})_i$  is a dummy variable that takes the value of 1 if the respondent is willing to submit future papers of similar quality to the same journal or another top-ranked general interest journal and 0 if otherwise.  $X$  contains the three control variables: (1) years

to next review, (2) research expectation for the next review, and (3) number of times the (hypothetical) paper has previously been rejected (0 or 1, randomly determined).

Holding constant  $X$ ,  $\beta_2$  is the difference in probability of submitting to these journals under RJR relative to RVR condition for men.  $\beta_3$  is the difference in this probability under FR relative to RVR condition for men.  $\beta_4$  is the additional effect of receiving an RJR for women relative to men. We expect  $\beta_4$  to be negative according to Hypothesis 4: women are more negatively affected by RJR than men.  $\beta_5$  is the additional effect of receiving FR for women relative to men. We expect  $\beta_5$  to be negative according to Hypothesis 4: women are more negatively affected by FR than men relative to RVR.

### *3.1 Heterogeneity Analysis*

We plan to conduct similar heterogeneity analysis for junior faculty, researchers who have an upcoming review, and researchers with young children. In addition, we expect the gender differences described above to be more pronounced for junior faculty, faculty with an upcoming high stakes review, and researchers with young children.

### *3.2 Mechanisms*

The randomization will ensure that any effect on the gender gap will not be driven by other differences between women and men, such as possible differences in the (perceived) quality of the (hypothetical) paper. Our empirical strategy will enable us to further investigate the potential reasons for why the treatments affect the gender gap. First, it could be that women are in fields where RJRs are less common and their networks have less experience with RJRs. Adding controls for field of research, network size (proxied by the number of people they talk to), and whether the respondent has experience with RJRs in the past will allow us to determine if this is the explanation. Second, it could be that the return to a top-5 publication differs for women because of differences in institution and research expectations. This might explain why women respond differently to a RJR from a top-5 journal than men; adding more controls for job characteristics will help determine if that is the case.

Our design also allows us to consider the mechanisms behind how different editorial decisions may affect gender differences in responses. Specifically, the RJR decision we are interested in has the following three features:

1. Negative wording: Whether or not it contains the word “reject”
2. Option value: Whether it preserves the option value of resubmitting to this top-5 journal
3. Ambiguity: How cryptic the respondents find the decision and the associated likelihood of publishing success

Relative to the RJR decision, the RVR decision does not contain negative wording or ambiguity; it does still have the option value. On the other hand, the FR decision, relative to the RJR decision, does not contain the option value or the ambiguity. We can write these differences as follows:

- $RJR - RVR = \text{negative wording} + \text{ambiguity}$
- $RJR - FR = \text{option value} + \text{ambiguity}$

Differences in perceived probabilities across the three decisions in our study do not give enough levers to identify the separate impacts of these three features. However, under the assumption that the ambiguity of the decision is only relevant for the specific journal from which the participant receives the decision (holding constant the negative signal from the wording and the option value from being able to resubmit to the same journal), we can use the difference between the perceived likelihood of publishing in this journal and the perceived likelihood of publishing in any leading journal to isolate the impact of the ambiguity. Specifically:

- Likelihood this (RJR – RVR) = negative wording + ambiguity
- Likelihood this (RJR – FR) = option value + ambiguity
  
- Likelihood any (RJR – RVR) = negative wording
- Likelihood any (RJR – FR) = option value

Thus,

- Likelihood this (RJR – FR) – Likelihood any (RJR – FR) = ambiguity
- Likelihood this (RJR – RVR) – Likelihood any (RJR – RVR) = ambiguity

To test this hypothesis, we first stack the data to create two observations for each respondent, one measuring the likelihood of publishing in this specific journal and one measuring the likelihood of publishing the paper in any leading journal. We then estimate the following regression using the FR treatment as the omitted category (excluding observations in the RVR treatment), in which case  $\beta_5$  is the effect of ambiguity for men and  $\beta_7$  is the additional effect of ambiguity for women. We hypothesize that these will both be negative.  $\beta_2$  and  $\beta_3$  give us the effect of the option value of the RJR decision relative to the FR decision. We hypothesize that the option value will positively affect perceived likelihood for men; we have no clear prediction on how the impact of the option value differs for women.

$$\begin{aligned}
 \text{Likelihood}_{ij} = & \beta_0 + \beta_1 \text{female}_i + \beta_2 \text{RJR}_i + \beta_3 \text{RJR}_i * \text{female}_i \\
 & + \beta_4 \text{ThisJournal}_j + \beta_5 \text{ThisJournal}_j * \text{RJR}_i \\
 & + \beta_6 \text{ThisJournal}_j * \text{female}_i + \beta_7 \text{ThisJournal}_j * \text{female}_i * \text{RJR}_i \\
 & + X' \gamma + \varepsilon_{ij}
 \end{aligned}
 \tag{6}$$

We can repeat this using the RVR treatment as the omitted category (excluding observations in the FR treatment) as another way to estimate the impact of the ambiguity.

In addition, we can take advantage of the second treatment dimension to test our estimate of the option value in a RJR relative to an FR decision by comparing the option value estimated above ( $\beta_2$  and  $\beta_3$ ) when this is the first time the paper has been submitted versus the second time the paper has been submitted. The option value of an RJR relative to an FR should be greater the more times the paper has been rejected in the past. Similarly, the option value of an RJR relative to an FR is worth less as the number of years to the next high stakes job review falls.

Finally, we can take advantage of various types of heterogeneity analysis to explore the effect of ambiguity further. For example, in fields with more experience with RJR decisions, the effect of ambiguity should be smaller. Similarly, for respondents who self-report being more risk-averse, the effect of ambiguity should be larger.

## Reference

Antecol, H., Bedard, K., & Stearns, J. (2018). Equal but Inequitable: Who Benefits from Gender-Neutral Tenure Clock Stopping Policies? *American Economic Review* 108 (9): 2420-41.

Berlin, N., & Dargnies, M-P. (2016). Gender differences in reactions to feedback and willingness to compete. *Journal of Economic Behavior and Organization*, 130, 320 -336.

Buser, T. & Yuan, H. (2019). Do women give up competing more easily? Evidence from the lab and the Dutch Math Olympiad. *American Economic Journal: Applied Economics*, 11(3), 225 -252.

Cheng, S. (2020). Careers Versus Children: How Childcare Affects the Academic Tenure-Track Gender Gap, Working paper.

Ceci, S. J., Ginther, D., Kahn, S., & Williams, W. (2014). Women in Academic Science: A Changing Landscape. *Psychological Science in the Public Interest* 15 (3): 75 -141.

Coffman, K., Collis, M., & Kulkarni, L. (2019). Stereotypes and belief updating. Harvard Business School Working Paper 19-068.

Eil, D. & Rao, J. M. (2011). The good news-bad news effect: asymmetric processing of objective information about yourself. *American Economic Journal: Microeconomics*, 3(2), 114 -138.

Ertac, S. & Szentes, B. (2011). The effect of performance feedback on gender differences in competitiveness: experimental evidence. Koç University-TUSIAD Economic Research Forum Working Papers 1104.

Wozniak, D., Harbaugh, W. T. & Mayr, U. (2014). The menstrual cycle and performance feedback alter gender differences in competitive choices. *Journal of Labor Economics* 32(1), 161 -198.

Wu, A. (2018.) Gendered Language on the Economics Job Market Rumors Forum. *AEA Papers and Proceedings*, 108:175-179.

Deryugina, T., Shurchkov, O., & Stearns, J. E. (2021). Covid-19 disruptions disproportionately affect female academics. *NBER Working Paper*.