**Title:** **The role of preparation on performance**

**Short title:** Preparation and performance

**Description:** We will explore how preparation affects performance by recruiting 300 participants through SONA to participate in a multiplication task.

**Objectives:** In conducting our study, we intend to assess whether a practicing (including unlimited and limited practice) a task we intend to use in future studies will improve performance and confidence.

**Background:** Our previous research suggests that women prepare more than men, even though they choose to compete less for a multiplication task. However, we were not able to assess whether women are correctly assuming that preparation affects performance, or if they are preparing more than necessary relative the benefits of preparation.

**Design:** The study involves random assignment to one of three conditions.

**Duration:** The study is expected to take each participant between 10-15 minutes. The study will start after approval and will run until all data are collected (or until the SONA subject pool closes on December 14th, 2020, whichever comes first). This is expected to take approximately 1 month.

**Target population:** The target population will be adults from the University of Pennsylvania SONA subject pool.

**Subject recruitment:** Subjects will be recruited from SONA by posting the link to the Qualtrics survey on the site. The listing will read “Participate in a brief study on individual and group decision making being conducted by researchers at the University of Pennsylvania. Study involves completing questions and completing a short task. Takes approximately 10 minutes. You will earn .25 credits for your participation.”

**Compensation:** Since we are recruiting subjects on SONA and thus cannot compensate them with money for their participation, participants will earn .25 credits for their time.

**Procedures:**

Upon clicking on the survey link from SONA, the first part of the survey is where participants can provide their consent for participation. Once they click the next button, confirming their willingness to participate, they will be provided the instructions for the multiplication task. The multiplication task involves solving multiplication problems with a combination of two numbers between 1-12 (e.g., 4 x 4 = 16). Then, they will be randomly assigned to one of three conditions: an unlimited preparation condition, a limited preparation condition, and a control condition. Afterwards, they will answer follow-up questions about confidence and beliefs about the effects of practice on performance. Then, they will complete the 2-minute multiplication task. After completing the task, they will complete measures of perceptions of gender differences in preparation and rank possible explanations for our previously observed gender difference in preparation on the multiplication task. Finally, they will read a debriefing form, and receive their credits for participation.

**Analysis plan:** For our main analysis, we will run a linear regression with condition as the predictor variable and performance as the outcome variable. We will also conduct exploratory analyses examining whether condition predicts confidence about future performance and beliefs about how helpful the preparation was, along with beliefs about which gender prepares more in general and why there may be gender differences in the decision to prepare.

**Consent Process:** After clicking on the Qualtrics link through SONA, participants will be shown an informed consent form inviting them to participate in a voluntary study that they may quit at any time without penalty. This form will include a comment about the confidentiality of the data and the minimal risk it poses to the participant. See the attached document for more information.

Because the study is conducted online and poses minimal risk to the participant, we request that written consent not be required. Instead, by clicking on the link to the study, participants will be considered to consent to the study.

**Potential Study risks:** The study poses minimal risk to the participants.

**Potential Study Benefits:** The participants are rewarded for their participation through SONA credits. In addition, the knowledge from this study can help improve our understanding of gender differences in the choice to prepare, with important implications for opportunity costs of overpreparing.

**Risk/Benefit Assessment:** The study poses minimal risk to participants while benefiting society by advancing our knowledge about improving gender equality across institutions.

**Study instruments:** Upon entering the study, all participants will first indicate their gender, which will be used to assess whether gender predicts the decision to prepare. Then participants will be randomly assigned to one of the three conditions. After completing the task for their respective conditions, all participants will guess how they will perform on the 2-minute multiplication task (our measure of confidence) and indicate whether they thought the task was useful on a 0-100 scale (our measure of beliefs about the effects of preparation). Then, they will complete the multiplication problems for 2 minutes. After participants complete the task, they will answer a series of questionnaires that will be included for exploratory analyses, including beliefs about gender differences in general willingness to prepare and about reasons for gender differences in preparation.

**Group modification:** The study will manipulate preparation: no preparation for the multiplication (participants will complete a control task), unlimited preparation (participants will be able to practice as much as they want), or limited preparation (participants will practice with a set number of problems).

**Random assignment:** Participants will be randomly assigned to a condition upon entering the study.

**Administration:** Participants will be recruited online from SONA. The studies will be administered until completed.

**Data management:** Data will be stored on personal computers of the study personnel as well as on cloud-based storage through the Open Science Framework. No personal identifying information will be collected.

**Abstract protocol:** 300 participants will be recruited online through SONA for a study assessing individual and group decision making. We will manipulate preparation to examine the effect on performance. Throughout the study, participants will answer questions about confidence, perceptions of the effects of preparation, perceptions of gender differences in preparation, and provide their demographic information. We are interested in whether the manipulations of preparation improve performance.

**Primary outcome:** The primary outcome variable is performance, as predicted by one’s condition.

**Secondary outcome:** The secondary outcome variable is gender differences in time spent preparing before a completing the multiplication task. Additionally, we will examine whether women .

**Resources necessary for human research protection:** We will not need research staff to support the experiment.

**Accrual:** Participants will be recruited from Amazon Mechanical Turk, which is often used in psychology to complete studies. This pool allows for access to many participants, enough to meet our target sample size.

**Inclusion Criteria:** Participants must be (a) adults on (b) Amazon Mechanical Turk) who (c) reside in the US, and (d) are American.

**Exclusion criteria:** We will exclude participants that indicate they are completing the study on a phone or tablet. Also, participants must meet the inclusion criteria.

**Vulnerable populations:** The population is not vulnerable to coercion and routinely participate in similar tasks for similar pay.

**Confidentiality:** No personal identifying information connected to actual responses.

**Privacy:** No contact information will be collected during the study. Participants sign-up by clicking on the Qualtrics link that directs them to the experiment.

**Data disclosure:** Following emerging norms in the field, data will be posted to a public online repository. These data will not include any personal identifying information.

**Impairment:** Participants will not be tested for competency. All participants are expected to be competent to give consent.

**Monitoring:** Keana Richards will monitor collection. There are no planned interim or stopping points during data collection.