# results

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**Describing main variables of interest** We replicated the effect of gender on the choice to compete when gender is included as the only predictor in the logistic regression: 19.85% of men chose to compete compared to 13.91% of women, $b = -0.43$, 95% CI $[-0.76, -0.10]$, $z = -2.56$, $p = .010$. Like Study 1, the gender effect on competitiveness is no longer significant after adding the same control variables as before (i.e., risk attitudes, confidence, task scores, and the hypothesized interaction between gender and condition), where risk attitudes, $b = 0.34$, 95% CI $[0.26, 0.42]$, $z = 8.34$, $p < .001$, confidence, $b = 0.01$, 95% CI $[0.01, 0.02]$, $z = 3.04$, $p = .002$, and task scores, $b = 0.01$, 95% CI $[0.00, 0.02]$, $z = 3.10$, $p = .002$ appear to explain the gender differences in competitiveness. Again, we find that gender predicts task scores when included by itself as a predictor, $b = -3.68$, 95% CI $[-6.27, -1.10]$, $t(1028) = -2.80$, $p = .005$. However, unlike Study 1, when other variables are included as predictors in the linear regression, we find that the effect of gender on task scores dissipates, $b = -0.46$, 95% CI $[-3.17, 2.24]$, $t(1020) = -0.34$, $p = .738$, suggesting that the other variables, such as risk attitudes, $b = -1.35$, 95% CI $[-1.85, -0.86]$, $t(1020) = -5.42$, $p < .001$, and confidence, $b = 0.35$, 95% CI $[0.30, 0.41]$, $t(1020) = 12.54$, $p < .001$, explained the gender difference in task scores in this study. In support of this possibility, we replicate the finding from the Study 1 of this chapter that gender predicts both risk attitudes, and confidence, .

**Effects of limited preparation condition on gender differences in choice to compete** We did not find evidence of an interaction between gender and preparation condition on the choice to compete in a logistic regression, $b = -0.17$, 95% CI $[-0.83, 0.48]$, $z = -0.51$, $p = .610$ (see Figure @ref(fig:s200)). Also, we did not find evidence of a significant effect of condition on the choice to compete as a sole predictor in a logistic regression, $b = -0.19$, 95% CI $[-0.52, 0.13]$, $z = -1.17$, $p = .243$.
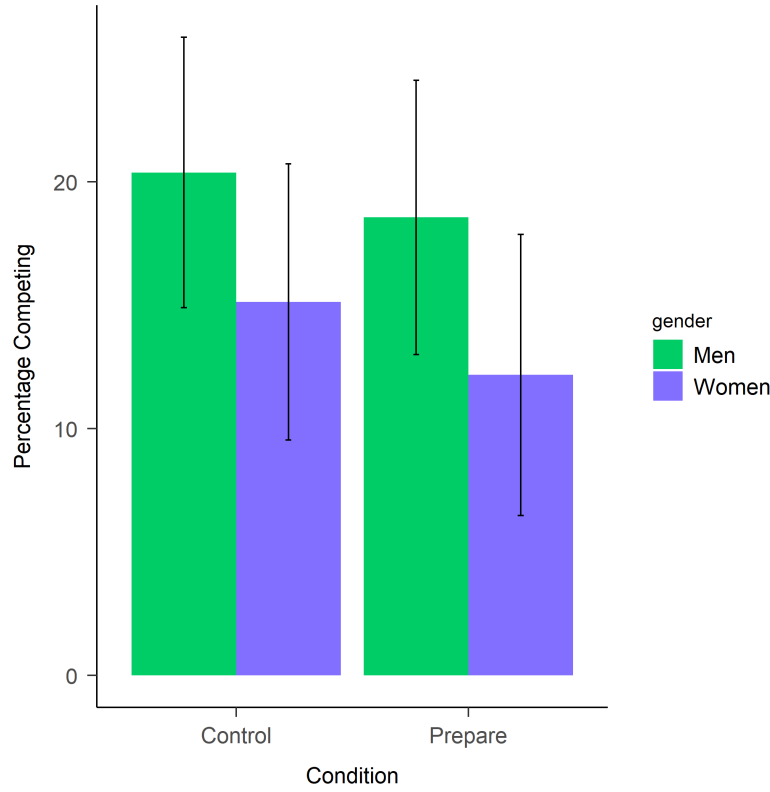
\begin{figure}

Figure 1: Proportion of men and women in Study 2 who chose to compete based on preparation condition. Limited preparation did not reduce the gender difference in competitiveness. Error bars represent standard errors.

| Predictors | (1) | | | (2) | | | (3) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Estimates | CI | p | Estimates | CI | p | Estimates | CI | p |
| (Intercept) | 50.04 | $48.20 - 51.87$ | **<0.001** | 48.36 | $46.32 - 50.41$ | **<0.001** | 34.48 | $30.30 - 38.67$ | **<0.001** |
| gender [Woman] | -3.68 | $-6.27 - -1.10$ | **0.005** | -2.24 | $-5.05 - 0.58$ | 0.120 | -0.46 | $-3.17 - 2.24$ | 0.738 |
| comp choice [tournament] | | | | 8.41 | $3.83 - 12.99$ | **<0.001** | 7.17 | $2.83 - 11.52$ | **0.001** |
| gender [Woman] * comp choice [tournament] | | | | -6.74 | $-13.74 - 0.27$ | 0.059 | -5.86 | $-12.42 - 0.70$ | 0.080 |
| conf rank | | | | | | | 0.35 | $0.30 - 0.41$ | **<0.001** |
| risk | | | | | | | -1.35 | $-1.85 - -0.86$ | **<0.001** |
| Observations | 1030 | | | 1030 | | | 1026 | | |
| R2 / R2 adjusted | 0.008 / 0.007 | | | 0.020 / 0.017 | | | 0.158 / 0.154 | | |

Figure 2: All models are linear regressions with task score as the dependent variable, where man and piece-rate payment scheme are the reference categories for participant gender and competition choice, respectively. After controlling for risk attitudes, confidence, and competition choice, women (INSERT DO / DO NOT) have lower scores on the multiplication task than men, p < .05 is considered significant and bolded.

| Predictors | (1) Odds Ratios | CI | p | (2) Odds Ratios | CI | p | (3) Odds Ratios | CI | p |
|---|---|---|---|---|---|---|---|---|---|
| (Intercept) | 0.25 | $0.20 - 0.31$ | **<0.001** | 0.26 | $0.19 - 0.35$ | **<0.001** | 0.01 | $0.00 - 0.02$ | **<0.001** |
| gender [Woman] | 0.65 | $0.47 - 0.90$ | **0.010** | 0.71 | $0.45 - 1.11$ | 0.131 | 1.18 | $0.71 - 1.96$ | 0.517 |
| condition [pract] | | | | 0.89 | $0.58 - 1.37$ | 0.597 | 0.93 | $0.58 - 1.48$ | 0.753 |
| gender [Woman] * condition [pract] | | | | 0.84 | $0.44 - 1.62$ | 0.610 | 0.67 | $0.33 - 1.38$ | 0.283 |
| risk | | | | | | | 1.41 | $1.30 - 1.53$ | **<0.001** |
| conf rank | | | | | | | 1.01 | $1.01 - 1.02$ | **0.002** |
| task score | | | | | | | 1.01 | $1.00 - 1.02$ | **0.002** |
| Observations | 1051 | | | 1051 | | | 1026 | | |
| R2 Tjur | 0.006 | | | 0.008 | | | 0.139 | | |

Figure 3: All models are logistic regressions with choice to compete as the dependent variable, where man and control are the reference categories for participant gender and preparation condition, respectively. The gender difference in the choice to compete is not reduced by preparation condition, but is explained by risk attitudes and confidence. p < .05 is considered significant and bolded.

| Characteristic | N = 1,088[1] |
|---|---|
| better_gender_guess | |
|   Men | 503 (49%) |
|   Women | 526 (51%) |
| perc_task_gender_pract | |
|   Men | 196 (19%) |
|   Women | 833 (81%) |
| perc_gender_comp | |
|   Men | 901 (88%) |
|   Women | 128 (12%) |
| perc_gen_gender_pract | |
|   Men | 150 (15%) |
|   Women | 876 (85%) |
| [1] n (%) | |

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\caption{Number and percentage of participants that selected each respective option when asked which gender would correctly solve more problems on the multiplication task (better_gender_guess), spend more time preparing for the multiplication task (perc_task_gender_pract), choose the tournament payment scheme more often (perc_gender_comp), and spend more time preparing on most tasks (perc_gen_gender_pract)} \end{figure}

| Variable | **Man**, N = 537[1] | **Woman**, N = 551[1] |
|---|---|---|
| task_score | 48 (35, 62) | 44 (32, 57) |
| comp_choice | | |
|   piecerate | 416 (80%) | 458 (86%) |
|   tournament | 103 (20%) | 74 (14%) |
| pract_choice | 185 (36%) | 221 (42%) |
| risk | 6.00 (3.00, 7.00) | 4.00 (2.00, 6.00) |
| conf_rank | 60 (50, 80) | 50 (40, 70) |

[1] Median (IQR); n (%)

Figure 4: Gender differences in the main variables of interest, including: task scores, choice to compete, choice to practice, confidence, and risk attitudes. Medians are reported for continuous variables (i.e., task score, risk attitudes, and confidence), with IQRs in parentheses. For categorical variables (i.e., choice to practice and choice to compete), we report the number and percentage of participants that fall into each category for each respective gender

**Gender differences in preparation** Despite no evidence for the effect of requiring people to prepare (i.e., condition) on the choice to compete across participants, we replicate the effect of gender on the choice to practice found in Study 1, where women were significantly more likely to opt-in to prepare for the task, even after being required to prepare in the preparation condition (see Figure @ref(fig:s204)). 42.02% of women across conditions chose to practice for the multiplication task beyond what was required, relative to 35.99%% of men, $b = 0.25$, 95% CI [0.00, 0.50], $z = 1.99$, $p = .047$ (see Figure @ref(fig:s207)). The gender effect holds even after controlling for the decision to compete and the interaction between gender and the decision to compete, $b = 0.31$, 95% CI [0.03, 0.59], $z = 2.17$, $p = .030$ (see Figure @ref(fig:s201)). Within the same model, we find that the choice to compete itself increases the likelihood a participant will practice before completing the paid task, $b = 0.83$, 95% CI [0.39, 1.27], $z = 3.70$, $p < .001$, but no evidence of an interaction between gender and payment scheme choice, $b = 0.04$, 95% CI [$-0.63$, 0.72], $z = 0.12$, $p = .906$. To see if the gender effect is explained by other variables included in the study, we added confidence, risk attitudes, and task scores to the previous model, and find that gender still significantly predicts the choice to practice, $b = 0.41$, 95% CI [0.12, 0.71], $z = 2.76$, $p = .006$, over any effects of differences in risk attitudes, confidence, or task scores. We ran the same two-part hurdle model described in Study 1 with gender, competition choice, and the interaction between those variables predicting the number of practice rounds variable. Again, we do not find evidence of gender differences in the choice to continue preparing after the initial decision to prepare, $b = -0.14$, 95% CI [-0.53, 0.25], $z = -0.71$, $p = 0.48$.
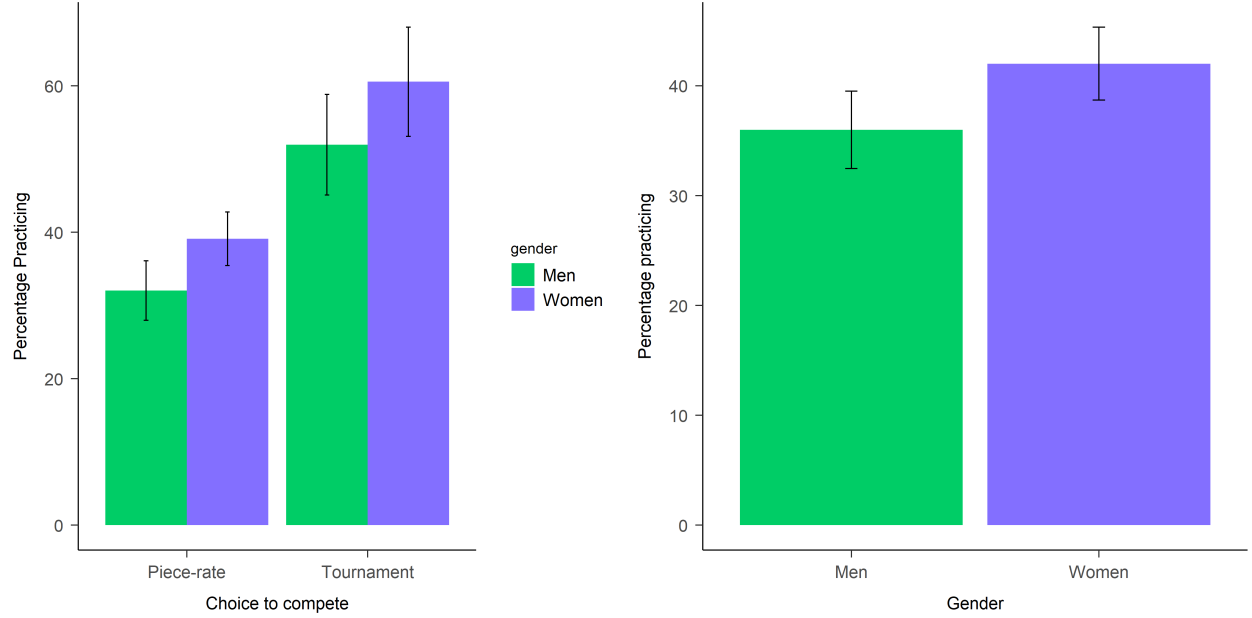
Figure 5: Proportion of men and women in Study X who chose to prepare (right panel) based on choice to compete (left panel). Women choose to prepare more than men, regardless of their decision to compete. Error bars represent standard errors.

| Predictors | (1) | | | (2) | | | (3) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Odds Ratios | CI | p | Odds Ratios | CI | p | Odds Ratios | CI | p |
| (Intercept) | 0.56 | $0.47-0.67$ | **<0.001** | 0.47 | $0.38-0.58$ | **<0.001** | 0.28 | $0.17-0.47$ | **<0.001** |
| gender [Woman] | 1.29 | $1.00-1.66$ | **0.047** | 1.36 | $1.03-1.80$ | **0.030** | 1.51 | $1.13-2.03$ | **0.006** |
| comp choice [tournament] | | | | 2.29 | $1.48-3.57$ | **<0.001** | 1.98 | $1.25-3.13$ | **0.003** |
| gender [Woman] * comp choice [tournament] | | | | 1.04 | $0.53-2.06$ | 0.906 | 0.98 | $0.49-1.96$ | 0.951 |
| conf rank | | | | | | | 1.00 | $0.99-1.01$ | 0.898 |
| risk | | | | | | | 1.08 | $1.03-1.14$ | **0.004** |
| task score | | | | | | | 1.00 | $1.00-1.01$ | 0.498 |
| Observations | 1040 | | | 1040 | | | 1026 | | |
| R2 Tjur | 0.004 | | | 0.028 | | | 0.036 | | |

Figure 6: All models are logistic regressions with choice to prepare as the dependent variable, where man and piece-rate payment scheme are the reference categories for participant gender and competition choice, respectively. Women (INSERT DO / DO NOT) prepare more than men regardless of competition choice, task score, risk attitudes, or confidence. $p < .05$ is considered significant and bolded.

**Perceptions of gender differences in preparation, performance, and competitiveness**   Again, we
find that these results align with participants' expectations, where they were significantly more likely to
expect women (with 85.38% selecting women versus 14.62% selecting men) to choose to prepare more than
men both in general, $\chi^2(1, n = 1088) = 513.72$, $p < .001$ (see Figure @ref(fig:s206)), and on the paid
multiplication task, $\chi^2(1, n = 1088) = 394.33$, $p < .001$ (see Figure @ref(fig:s203)) (with 80.95% selecting
women versus 19.05% selecting men), despite expecting men to choose to compete more often,
$\chi^2(1, n = 1088) = 580.69$, $p < .001$ (see Figure @ref(fig:s205)) and expecting no gender differences in
performance on the task, $\chi^2(1, n = 1088) = 0.51$, $p = .473$ (see Figure @ref(fig:s204)).

**Post-manipulation measures**   We also added several post-manipulation questions to tap into participants'
experience of the multiplication task itself, feelings of preparedness, and general beliefs about the value of
preparation to see if they may explain some of the observed effects. First, in a logistic regression with
feelings of preparedness regressed upon condition and the interaction between preparation choice and gender,
only the choice to prepare predicts feelings of preparation, $b = 1.06$, 95% CI [0.56, 1.57], $z = 4.14$, $p < .001$.
However, we do not have evidence that gender predicts field-specific ability beliefs, $b = -0.09$, 95% CI [$-0.23$,
0.05], $t(1024) = -1.30$, $p = .192$, contrary to previous literature (INSERT confirm if this is correct).

We also tested whether the interaction between practice choice and condition, along with gender, predict
participants' interest in the multiplication and self-reported fatigue after completing the paid task. Our
results suggest that participants who chose to prepare before the task reported feeling significantly more
fatigued than those who did not choose to practice, $b = 0.31$, 95% CI [0.02, 0.59], $t(1021) = 2.08$, $p = .038$,
and that participants in the preparation condition were significantly more fatigued than those who were
assigned to the control condition, $b = 0.34$, 95% CI [0.08, 0.60], $t(1021) = 2.59$, $p = .010$. We do not find
evidence that gender, $b = -0.02$, 95% CI [$-0.22$, 0.18], $t(1021) = -0.20$, $p = .839$, nor the interaction
between condition and practice choice, $b = 0.17$, 95% CI [$-0.25$, 0.59], $t(1021) = 0.78$, $p = .433$, predicted
self-reported fatigue. When gender is included as a sole predictor of self-reported fatigue, we again find no
evidence that there are significant gender differences in fatigue, $b = 0.01$, 95% CI [$-0.20$, 0.21],
$t(1024) = 0.08$, $p = .940$. Finally, we find that women report being significantly less interested in the task,
$b = -0.27$, 95% CI [$-0.45$, $-0.08$], $t(1021) = -2.88$, $p = .004$, even though participants who chose to prepare
tend to be significantly more interested in the task, $b = 0.34$, 95% CI [0.08, 0.60], $t(1021) = 2.61$, $p = .009$.
No other effects in the model are significant (see Table X) [INSERT TABLE = actuallly will just include
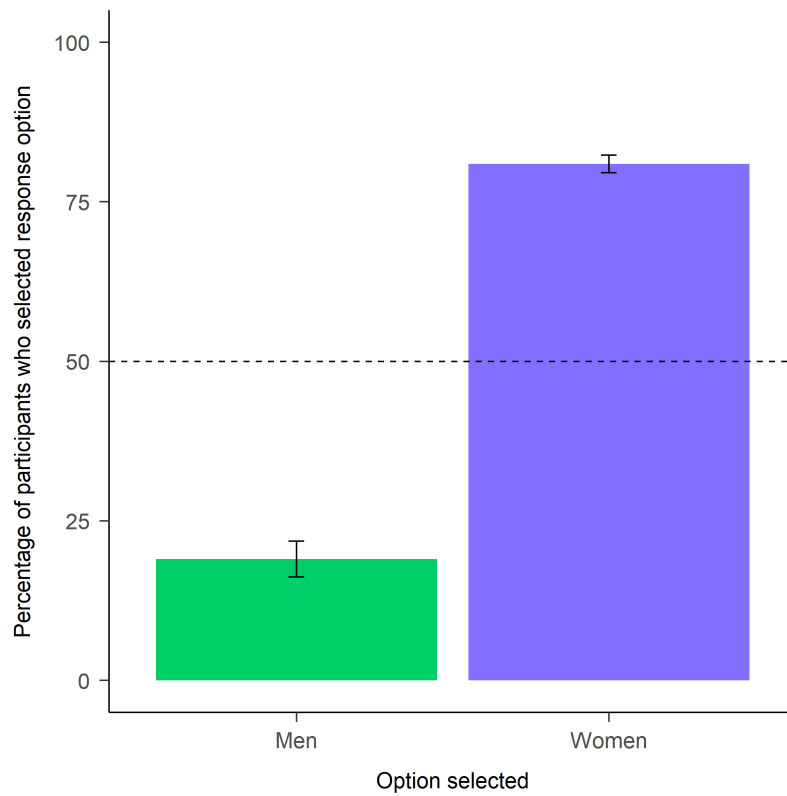more detail here since this model is not super central to argument].

Figure 7: Proportion of participants that predicted women or men would spend more time preparing for the multiplication task. A significantly larger proportion of participants expected women to spend more time preparing for the multiplication task. Error bars represent standard errors.
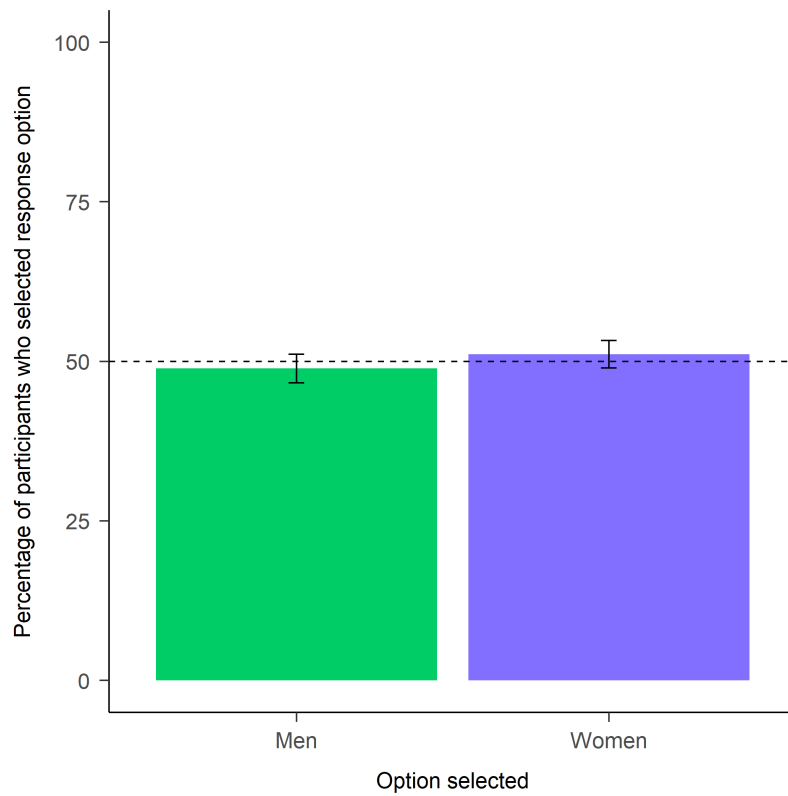
Figure 8: Proportion of participants that predicted women or men would correctly solve more problems on the multiplication task. There was no significant difference in the proportion of participants that expected women or men to perform better on the multiplication task. Error bars represent standard errors.
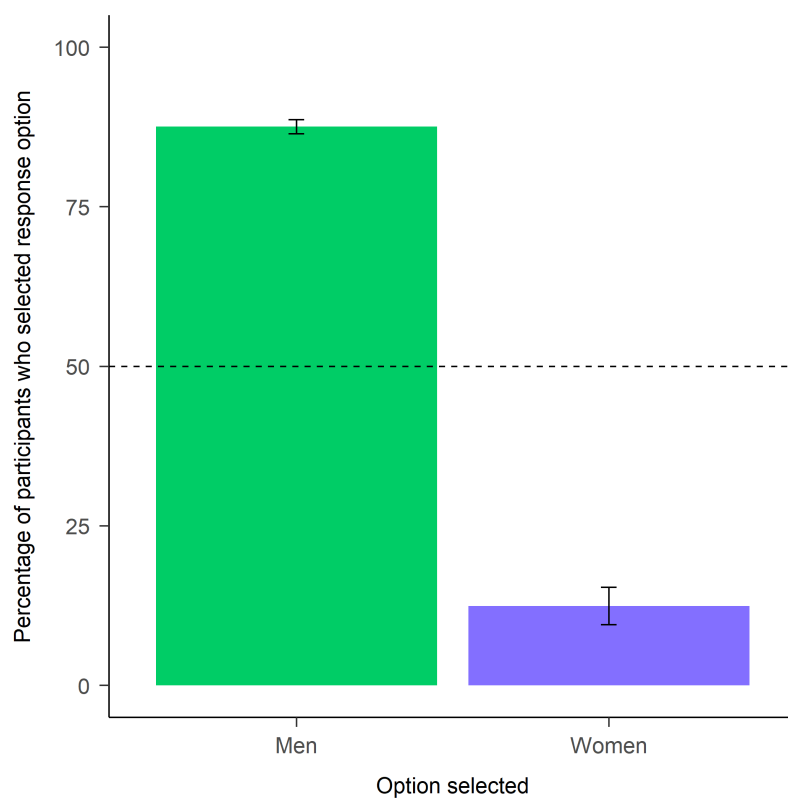
Figure 9: Proportion of participants that predicted women would choose the tournament payment scheme more often, men would choose the tournament payment scheme more often, or there would be no gender differences in the choice to compete. A significantly larger proportion of participants expected men to be more likely to choose to compete. Error bars represent standard errors.
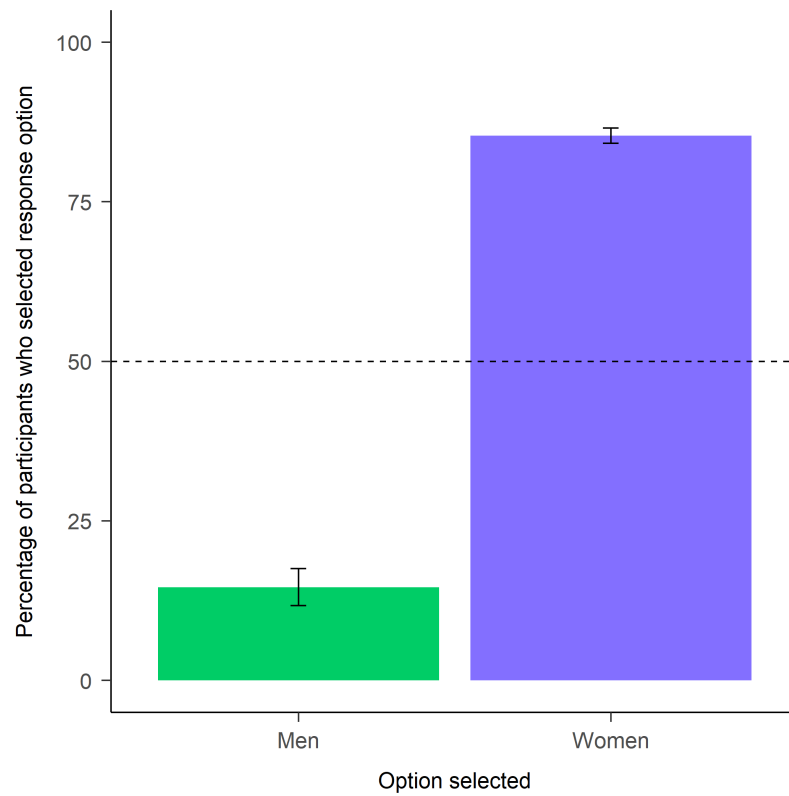
Figure 10: Proportion of participants that predicted women or men would spend more time preparing on most tasks. A significantly larger proportion of participants expected women to spend more time preparing on most tasks. Error bars represent standard errors.
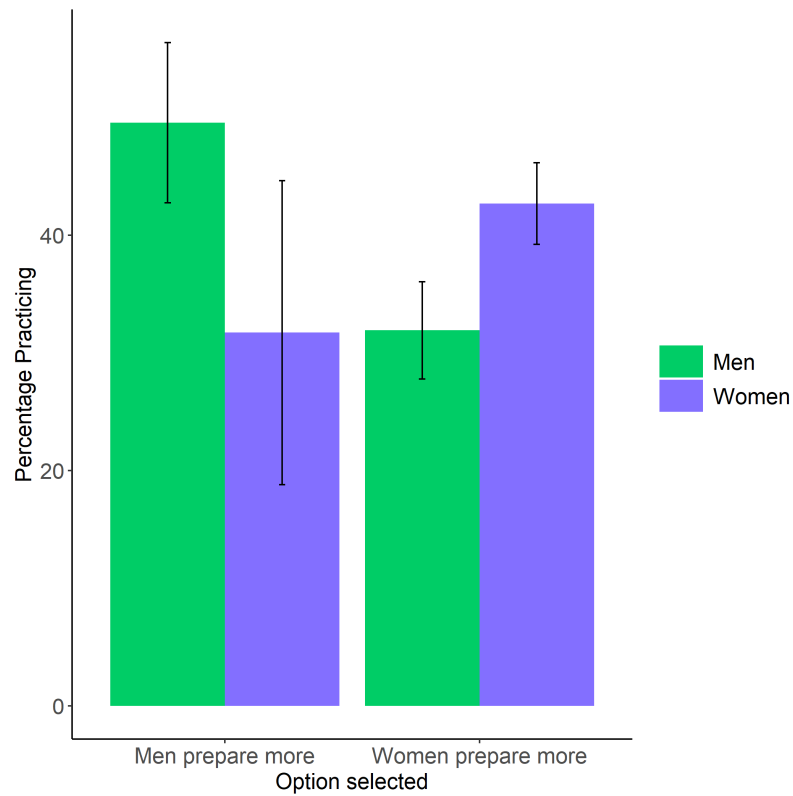
Figure 11: Proportion of men and women in Study INSERT who chose to practice based on whether they thought men or women spend more time preparing on most tasks. Women who thought women generally prepare more were especially likely to choose to practice. Error bars represent standard errors.
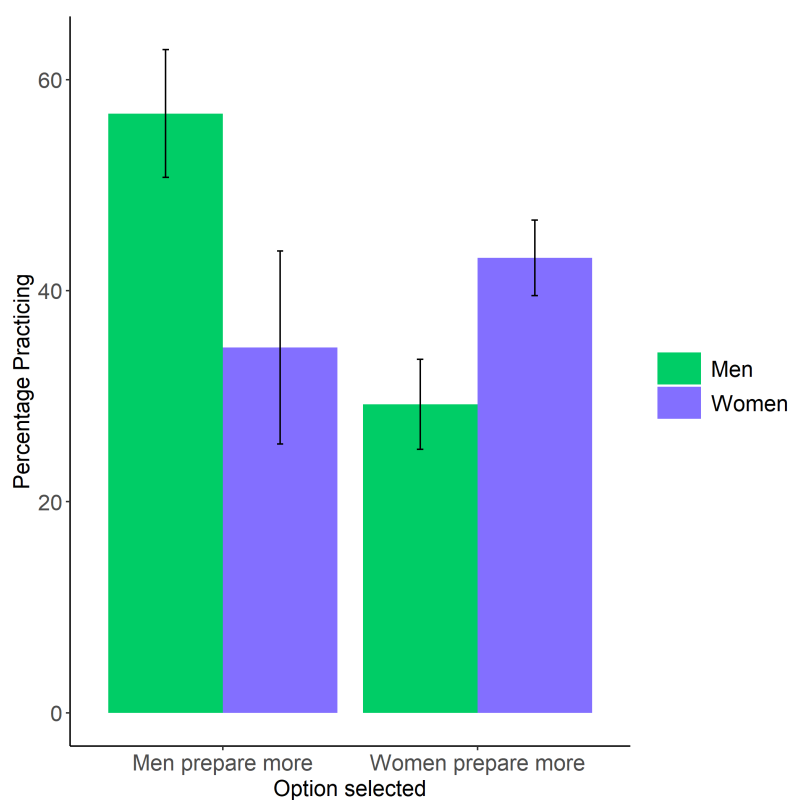
Figure 12: Proportion of men and women in Study INSERT who chose to practice based on whether they thought men or women spend more time preparing for the multiplication task. Women who thought women prepare more for the multiplication task were especially likely to choose to practice. Error bars represent standard errors.