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 competition choice), 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 (see Table @ref(tab:tab-comp-choice-study2)).

	(1)			(2)			(3)		
Predictors	*Odds Ratios*	*CI*	*p*	*Odds Ratios*	*CI*	*p*	*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		
R^2 Tjur	0.006			0.008			0.139		

Table 1: 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, task scores, and confidence. p < .05 is considered significant and bolded.

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 competition choice, $b = 7.17$, 95% CI [2.83, 11.52], $t(1020) = 3.24$, $p = .001$, 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 (see @ref(tab:tab-task-scores-study2)). In support of this possibility, we replicate the finding from the Study 1 of this chapter that gender predicts both risk attitudes, $b = -1.14$, 95% CI $[-1.46, -0.82]$, $t(1024) = -7.00$, $p < .001$ and confidence, $b = -9.76$, 95% CI $[-12.49, -7.02]$, $t(1027) = -6.99$, $p < .001$. See Table @ref(tab:summary-table-gender-study2) for a summary of gender differences in the main variables of interest.

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 (%)

Table 2: 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 task score, risk attitudes, and confidence, with IQRs in parentheses. For choice to practice and choice to compete, we report the number and percentage of participants that fall into each category for each respective gender.

	(1)			(2)			(3)		
Predictors	*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		
R^2 / R^2 adjusted	0.008 / 0.007			0.020 / 0.017			0.158 / 0.154		

Table 3: 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 no longer have lower scores on the multiplication task than men, p < .05 is considered significant and bolded.

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], $z = -1.17$, $p = .243$.

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. 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 right panel of Figure @ref(fig:panel-study2)). 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 left panel of Figure @ref(fig:panel-study2)). 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 (see Table @ref(tab:tab-pract-choice-study2)). 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.

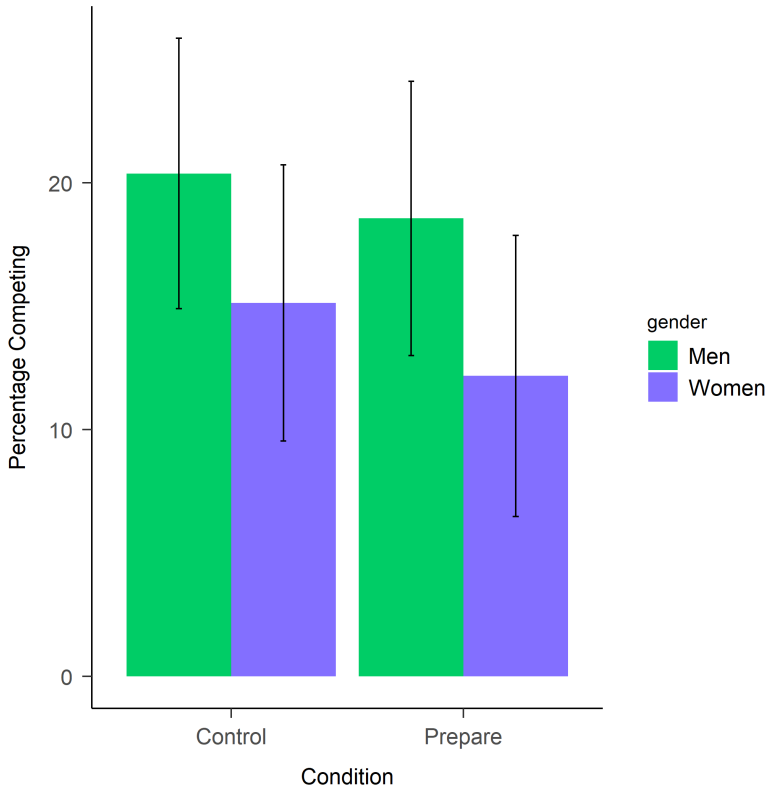

Figure 1: Proportion of men and women in Study 2 who chose to compete based on preparation condition. Limited preparation did not reduce the gender difference in competitiveness. Error bars represent standard errors.

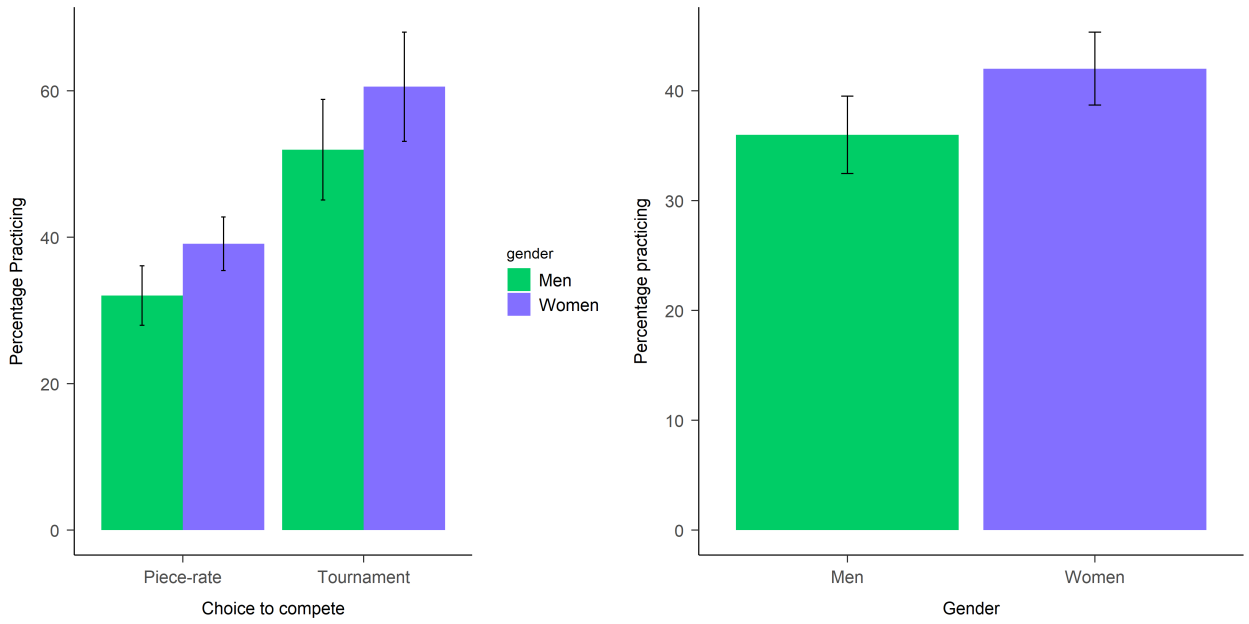

Figure 2: Right panel shows the proportion of men and women in Study 2 who chose to prepare. Left panel shows the proportion of men and women in Study 2 who chose to prepare based on choice to compete. Women choose to prepare more than men, regardless of their decision to compete. Error bars represent standard errors.

	(1)			(2)			(3)		
Predictors	*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		
R^2 Tjur	0.004			0.028			0.036		

Table 4: 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 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)). See Table @ref(tab:summary-table-beliefs-study2) for a summary of participants' responses to the questions about gender differences in preparation, performance, and competitiveness.

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 (%)

Table 5: Number and percentage of participants that selected each respective option when asked which gender would correctly solve more problems on the multiplication task, spend more time preparing for the multiplication task, choose the tournament payment scheme more often, and spend more time preparing on most tasks.

Effects of gender and perceptions on practicing Like Study 1, we explored whether women who believed other women prepare more were especially likely to prepare. To that end, we ran a logistic regression with the choice to practice as the dependent variable and gender, beliefs about gender differences in preparation on most tasks, and the interaction between those two variables as the predictors. We replicate the interaction effect found in Study 1, such that women who said women generally prepare more on most tasks were especially likely to prepare, $b = 1.21$, 95% CI [0.42, 2.04], $z = 2.94$, $p = .003$ (see Figure @ref(fig:pract-choice-by-gender-and-perc-gen-prep-bar-study2)). We ran the same analysis with participants' beliefs about gender differences in preparation for the multiplication task, gender, and the interaction between the two as predictors instead, and replicate the interaction effect from the previous study, $b = 1.52$, 95% CI [0.86, 2.18], $z = 4.51$, $p < .001$, such that women who said women spent more time preparing for the multiplication task were especially likely to prepare (see Figure @ref(fig:pract-choice-by-gender-and-perc-task-prep-bar-study2)).

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 predicted feelings of preparation, $b = 1.06$, 95% CI [0.56, 1.57], $z = 4.14$, $p < .001$.

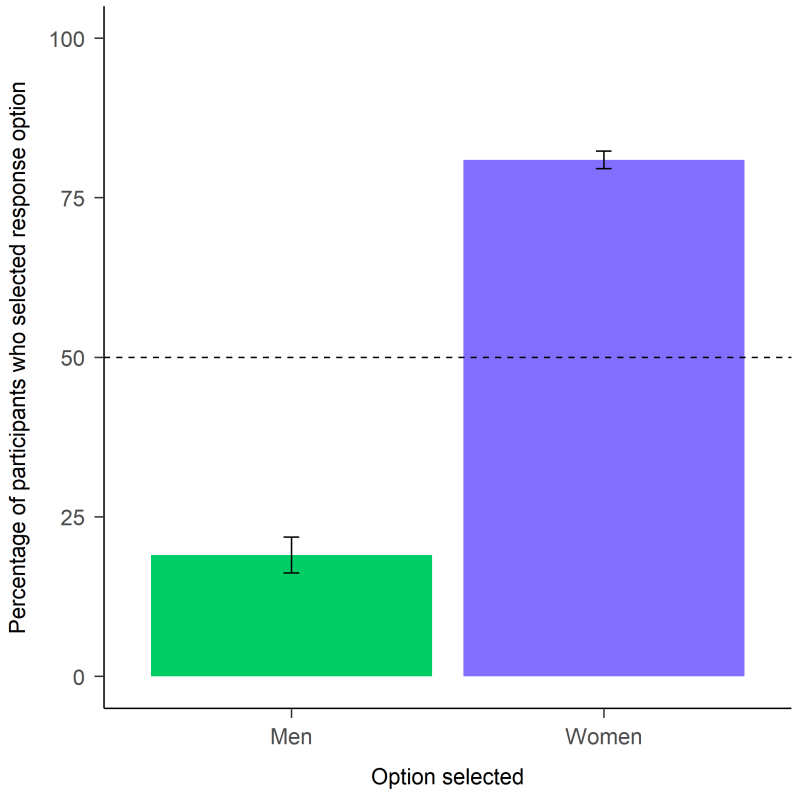

Figure 3: Proportion of participants that predicted women or men would spend more time preparing for the multiplication task. A significantly larger proportion of participants expected women to spend more time preparing for the multiplication task. Error bars represent standard errors.

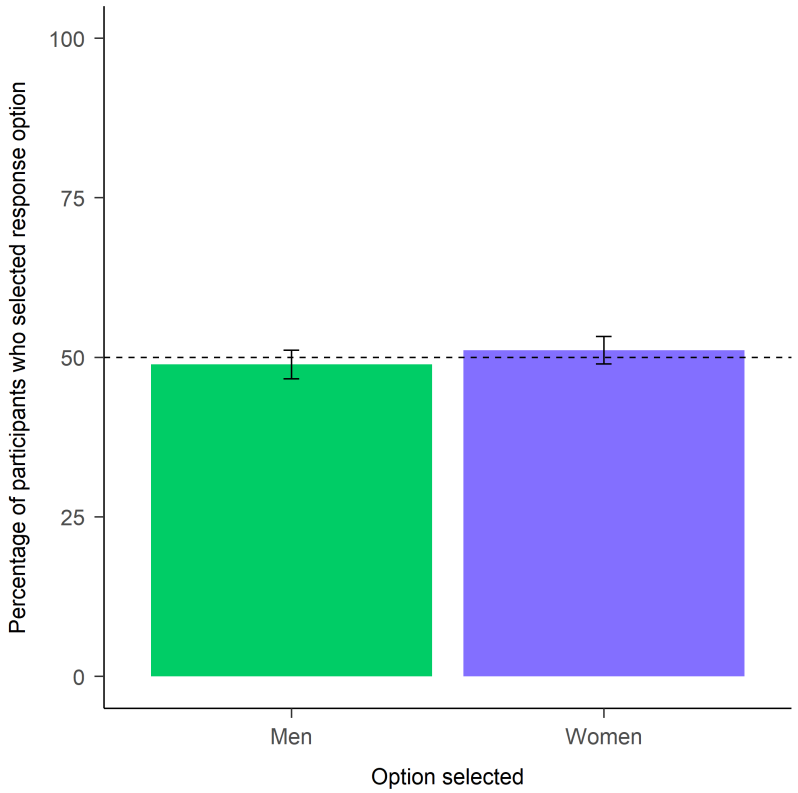

Figure 4: Proportion of participants that predicted women or men would correctly solve more problems on the multiplication task. There was no significant difference in the proportion of participants that expected women or men to perform better on the multiplication task. Error bars represent standard errors.

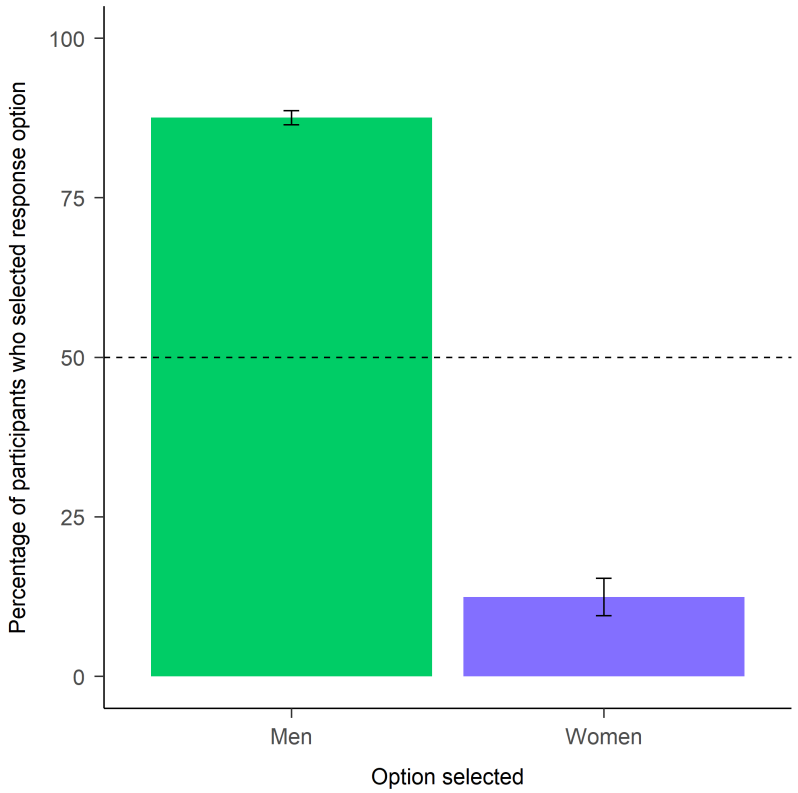

Figure 5: Proportion of participants that predicted women or men would choose to compete. A significantly larger proportion of participants expected men to be more likely to choose to compete. Error bars represent standard errors.

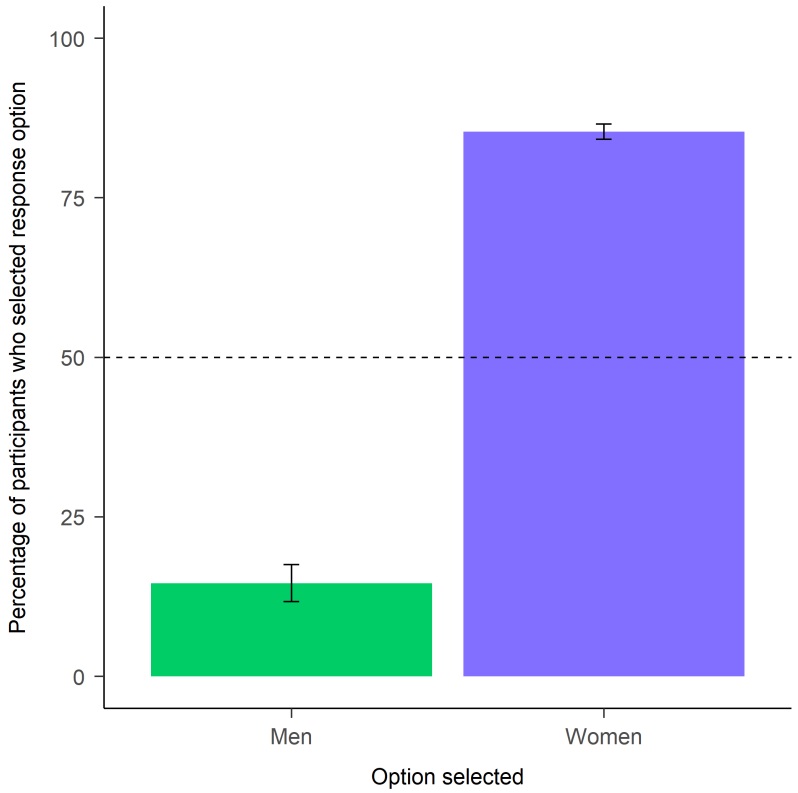

Figure 6: Proportion of participants that predicted women or men would spend more time preparing on most tasks. A significantly larger proportion of participants expected women to spend more time preparing on most tasks. Error bars represent standard errors.

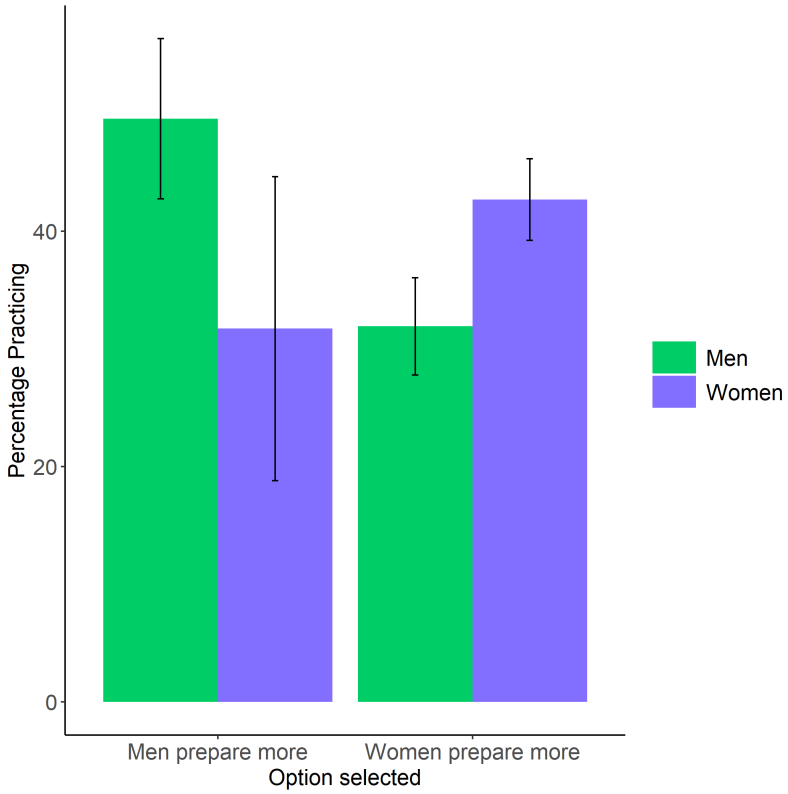

Figure 7: Proportion of men and women in Study 2 who chose to practice based on whether they thought men or women spend more time preparing on most tasks. Women who thought women generally prepare more were especially likely to choose to practice. Error bars represent standard errors.

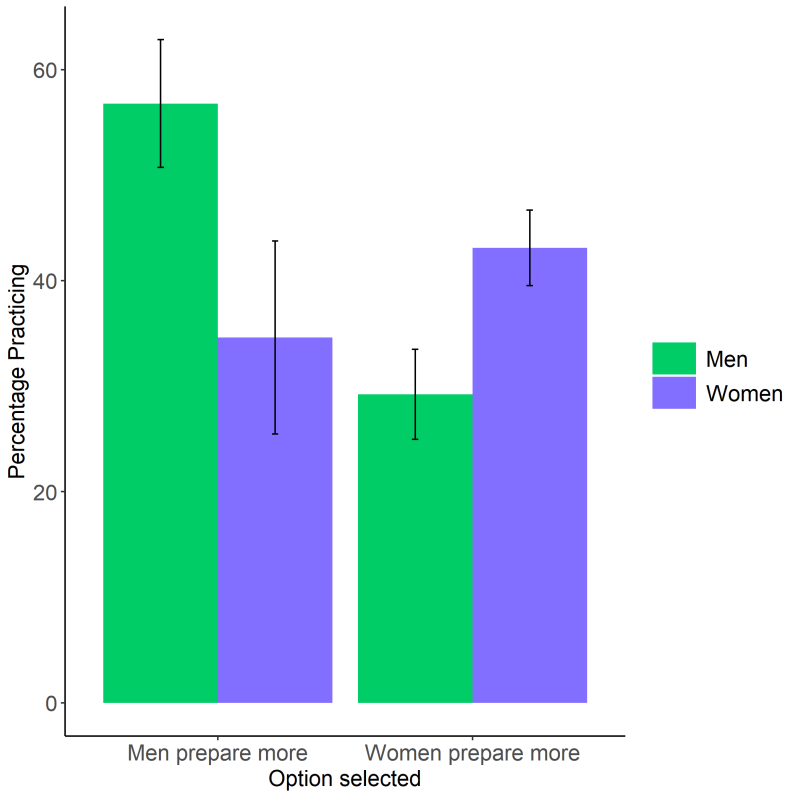

Figure 8: Proportion of men and women in Study 2 who chose to practice based on whether they thought men or women spend more time preparing for the multiplication task. Women who thought women prepare more for the multiplication task were especially likely to choose to practice. Error bars represent standard errors.

We also tested whether the interaction between practice choice and condition, along with gender, predicted 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], $t(1024) = 0.08$, $p = .940$. Also, we do not have evidence that gender predicted field-specific ability beliefs, $b = -0.09$, 95% CI [−0.23, 0.05], $t(1024) = -1.30$, $p = .192$, contrary to previous work [@Leslie2015]. 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], $t(1021) = 2.61$, $p = .009$.