

# Online Appendix

## Failures in Forecasting: An Experiment on Interpersonal Projection Bias

### A Supplemental Material

#### A.1 Confidence Measures

After each guess, predictors reported their confidence in that guess on a five-point scale, where 1 represents “Not at all confident” and 5 represents “Extremely confident”. Table A1 reports average responses.

**Table A1:**  
SELF-REPORTED CONFIDENCE BY GROUP

	1 <sup>st</sup> Prediction	2 <sup>nd</sup> Prediction	3 <sup>rd</sup> Prediction
Group <i>I</i>	3.26 (0.062)	3.34 (0.066)	3.27 (0.072)
Group <i>O</i>	3.37 (0.060)	3.32 (0.065)	3.34 (0.065)
Group <i>O</i> <sub>-1</sub>	-	3.57 (0.060)	3.52 (0.065)

*Notes:* Standard errors are in parentheses. Survey used five-point scale ranging from 1 (“Not at all confident”) to 5 (“Extremely confident”).

#### A.2 The (Non) Effect of Task-Completion Time

Here, we discuss how task completion time had no apparent effects on the decisions of predictors. Our analysis splits the horizon of the experiment into two parts: (i) the “early phase” is the segment prior to completing five tasks, and (ii) the “late phase” is the segment after completing five tasks

yet prior to completing twenty tasks. In Table A2, we show that neither predictors’ first guesses nor their first confidence ratings were affected by the amount of time it took them to complete the early phase. We then repeat this analysis for predictors’ second and third guesses (and associated confidence ratings) in Tables A4–A3, showing that the time taken to complete the late phase similarly had no effects.<sup>1</sup>

It’s worth noting that this analysis drops some extreme outliers. There was a great deal of heterogeneity in task completion time. While the average participant took a little over six minutes to complete the early phase (mean completion time is 386 seconds), that number is inflated by outliers (median completion time is 295 seconds). Excessively long completion times likely stemmed from inattention to the experiment. In particular, eleven subjects took more than twenty minutes to complete the early phase, and ten subjects took over an hour to complete the late phase; we drop these subjects from the regressions in Tables A2–A3. Throughout, we fail to find any consistent evidence suggesting that the amount of time participants took to complete their work altered their predictions or confidence.

**Table A2:**  
EFFECT OF EARLY-PHASE COMPLETION TIME ON PREDICTIONS

Estimation Technique:	OLS		Ordered Probit
	1 <sup>st</sup> Prediction	1 <sup>st</sup> Prediction	1 <sup>st</sup> Confidence
Work Time (Seconds)	-0.004 (0.005)	- -	- -
Work Time × I{Group I}	- -	-0.008 (0.008)	-0.0005 (0.0004)
Work Time × I{Group O}	- -	0.001 (0.008)	0.00006 (0.0004)
I{Group I}	22.72 (2.293)	24.30 (2.984)	- -
I{Group O}	31.47 (2.317)	29.96 (2.954)	- -
Observations	433	433	433

*Notes:* Standard errors are in parentheses. Dependent variable is listed in column header. Confidence ratings coded 1 (“Not at all confident”) to 5 (“Extremely confident”). Ordered probit includes separate estimation of cuts by group.

<sup>1</sup> Total completion time is also unrelated to predictors’ own (hypothetical) willingness to work on the task, which we elicited immediately after eliciting their second and third guesses.

**Table A3:**  
EFFECT OF LATE-PHASE COMPLETION TIME ON SECOND PREDICTIONS

Estimation Technique:	OLS		Ordered Probit
	2 <sup>nd</sup> Prediction	2 <sup>nd</sup> Prediction	2 <sup>nd</sup> Confidence
Work Time (Seconds)	-0.001 (0.001)	- -	- -
Work Time $\times$ $\mathbb{I}\{\text{Group } I\}$	- -	0.001 (0.002)	0.001 (0.001)
Work Time $\times$ $\mathbb{I}\{\text{Group } O\}$	- -	0.001 (0.002)	0.001 (0.001)
Work Time $\times$ $\mathbb{I}\{\text{Group } O_{-1}\}$	- -	0.003 (0.002)	0.003 (0.001)
$\mathbb{I}\{\text{Group } I\}$	19.65 (1.818)	18.28 (2.603)	- -
$\mathbb{I}\{\text{Group } O\}$	23.26 (1.859)	21.22 (2.580)	- -
$\mathbb{I}\{\text{Group } O_{-1}\}$	17.54 (1.792)	22.04 (2.837)	- -
Observations	656	656	656

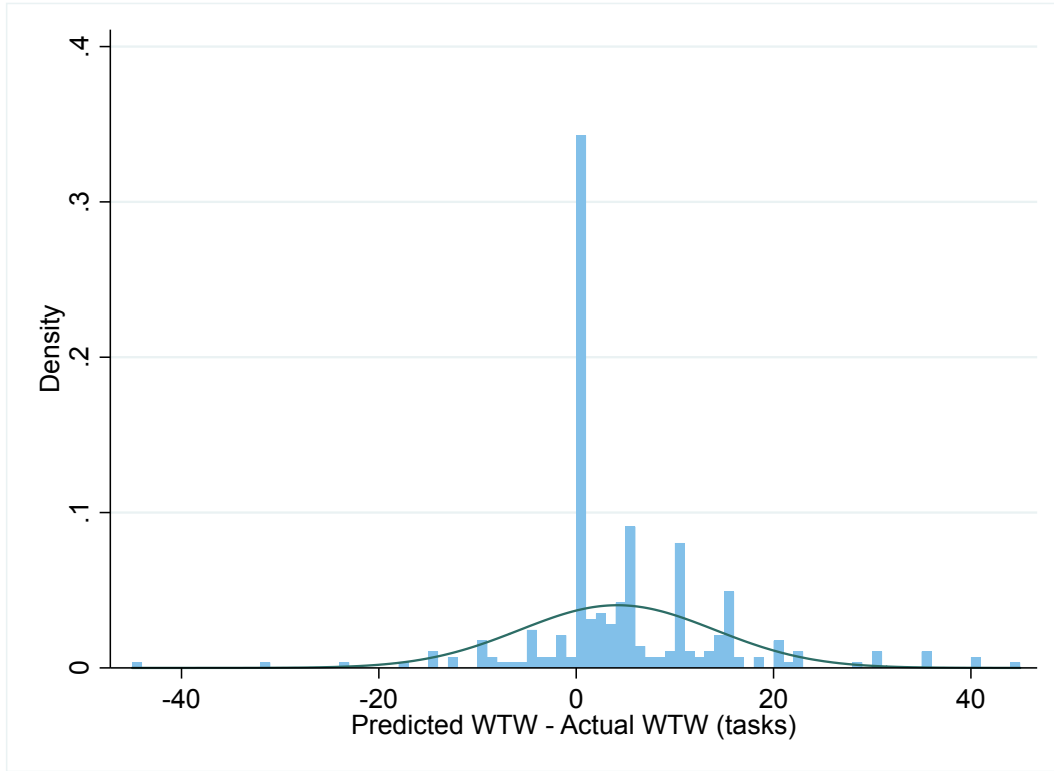
*Notes:* Standard errors are in parentheses. Dependent variable is listed in column header. Confidence ratings coded 1 (“Not at all confident”) to 5 (“Extremely confident”). Ordered probit includes separate estimation of cuts by group.

**Table A4:**  
EFFECT OF LATE-PHASE COMPLETION TIME ON THIRD PREDICTIONS

Estimation Technique:	OLS		Ordered Probit
	3 <sup>rd</sup> Prediction	3 <sup>rd</sup> Prediction	3 <sup>rd</sup> Confidence
Work Time (Seconds)	-0.001 (0.001)	- -	- -
Work Time $\times$ $\mathbb{I}\{\text{Group } I\}$	- -	-0.0002 (0.002)	-0.0001 (0.0001)
Work Time $\times$ $\mathbb{I}\{\text{Group } O\}$	- -	-0.000004 (0.002)	-0.0001 (0.0001)
Work Time $\times$ $\mathbb{I}\{\text{Group } O_{-1}\}$	- -	-0.005 (0.003)	0.0002 (0.0001)
$\mathbb{I}\{\text{Group } I\}$	19.18 (1.826)	17.29 (2.619)	- -
$\mathbb{I}\{\text{Group } O\}$	24.51 (1.867)	23.57 (2.596)	- -
$\mathbb{I}\{\text{Group } O_{-1}\}$	19.95 (1.801)	23.61 (2.854)	- -
Observations	656	656	656

*Notes:* Standard errors are in parentheses. Dependent variable is listed in column header. Confidence ratings coded 1 (“Not at all confident”) to 5 (“Extremely confident”). Ordered probit includes separate estimation of cuts by group.

### A.3 Individual Heterogeneity in Intrapersonal Predictions



**Figure A1:** *Histogram of individual differences in predicted versus actual WTW for Predicting Workers. Bars have width of 1 task. Histogram displays only differences between -50 and 50 for visual clarity.*

## B Experimental Instructions

### B.1 Workers

#### Preliminary Instructions

We will not deceive you whatsoever in this experiment. All of the instructions provide examples and guidance for the actual tasks you will do. There will be no tricks. You will do a simple task and then we will ask you about your willingness to do additional tasks. You will earn at least the fixed payment of \$3. Depending on your willingness to work, you may earn more. You must complete the session to earn any pay for this study. There will be absolutely no exceptions to this rule. All payments will be credited to your MTurk account within one week of completing the study.

## Overview

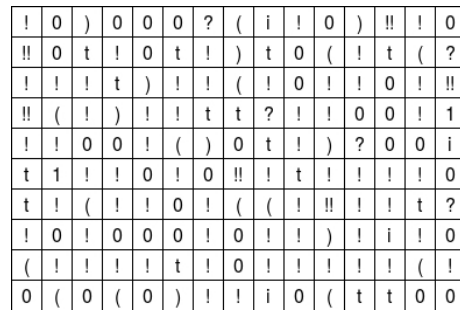
The experiment is simple, but we want to make sure you understand the basic structure.

1. We will review the real-effort task and you will complete some tasks. 2. We will ask you about doing additional work for additional pay.

You will know that you have reached the end of the survey when you see a screen saying THIS IS THE END OF THE SURVEY. Please do not exit until you have seen this screen. This final screen includes a code that you must input into MTurk in order to get paid.

## Task

The task in the experiment involves counting. You will see an image like the image below:



You will then be asked to count a specific character that is present in the image. The question will be phrased as: How many are in the picture?

Symbol to count: t

This means you should count how many "t" there are in the image.

The symbol that you will count will change in each image, so pay close attention. To make the task harder (and to prevent cheating) we have included two symbols that are very close to one another: ! and !!

These are different. So if you are asked to count ! in the image above, there are 61. If you are asked to count !!, there are only 6. Do not count !! when counting !

**PLEASE NOTE:** You must type the exact correct answer in order to advance to the next image. Counting each image should take about 30 seconds.

This is the end of the instructions. Reminder: you will be asked questions about your willingness to complete more of this task for additional pay at the end of this initial block of work. You will complete 5 [Alternate: 20] tasks in this initial block of work. When you click to advance to the next slide, you will begin.

*[Here, the participant completed either five or twenty tasks.]*

## **Willingness to Work**

As of right now, you have earned \$3 for completing the tasks and for your overall participation in this study. In a few moments, we will ask you one question about your willingness to do additional tasks to increase your payout.

You have already sampled the task and we will ask you about your willingness to complete more of the same task. The task is not different from your sample experience, except that you would have different tables to count.

We will ask you just one question, and this question will count for real. Your choice will determine whether you must complete additional tasks and whether you might earn additional pay.

We will use a specific system to ensure you answer truthfully. The next few pages will explain this in detail.

The method we use to determine whether you will complete extra tasks may seem complicated. But, we'll walk through it step-by-step. The punchline will be that it's in your best interest to just answer truthfully. Here's how the system works.

First, we will ask you how many additional tasks (counting matrices) you are willing to do for a fixed amount of money.

For instance, we might ask: "What is the maximum number of extra tasks you are willing to do for \$0.40?" This question means that we will give you \$0.40 in exchange for you completing some amount of additional work.

On the decision screen, you will be presented a slider that goes between 0 and 100 tasks. You will also see an amount of money next to the slider.

You will move the slider to indicate the maximal number of tasks you'd be willing to do for that amount of money.

That is, if you would be willing to do 15 additional tasks but not 16, then you should move the slider to 15.

We will then draw a random number between 0 and 100. If your answer is less than that random number, you will not do additional tasks.

However, if your answer is greater than or equal to that random number, you will do a number of additional tasks equal to the random number.

Example: Suppose you indicated you were willing to do 15 additional tasks for \$0.40 and this question was chosen as the one that counts. If the random number was 16 or higher, you would do no additional tasks. However, if the random number was 12, you would do 12 additional tasks.

The next pages have a short quiz to help clarify how this works.

Suppose you were asked "What is the maximum number of additional tasks you are willing to do for \$0.80?" and you responded 60. If the random number is 17, how many tasks will you complete? *[Four multiple-choice answers; subject must answer correctly.]*

Correct! You will earn the extra payment if the random number is less than the number you indicated, and you will complete a number of additional tasks equal to the random number.

Suppose you were asked "What is the maximum number of additional tasks you are willing to do for \$0.80?" and you responded 60. If the random number is 76, how many additional tasks will you complete? *[Four multiple-choice answers; subject must answer correctly.]*

Correct. If the random number is greater than your choice, you will complete zero tasks and you will not receive an extra payment.

This method of selecting how many additional tasks you will do might seem very complicated, but as we previously highlighted, there's a great feature to it: your best strategy is to simply answer honestly.

If, for example, you'd be willing to do 20 tasks for \$0.40 but not 21, then you should answer 20. You may very well do less than 20 tasks (depending on the random number) but you certainly will not do more than 20. Put simply: just answer honestly.

We will now ask you the question about your willingness to do additional tasks for additional payment. Remember, we are using the method just described, so answer honestly.

The next screen is the real question, so think carefully.

What is the maximal number of additional tasks you're willing to complete for \$2? *[Alternate: \$3]*

*[Slider here.]*

We'll now draw the random number to determine if you complete additional tasks.

Since the random number was higher than the number you were willing to do, you will not complete any supplemental tasks and you will be paid any additional earnings. *[Alternate: Since you were willing to work, you will now complete supplemental tasks and you will be paid \$2 / \$3 additional earnings when you complete the survey].*

Thank you for participating. This is the last screen before the MTurk code.

Your responses have been stored. The code to input into Amazon's MTurk is on the screen that follows. Payments will be processed within one week.

Please click the final button below to submit your work.

## **B.2 Predictors**

### **Preliminary Instructions**

We will not deceive you whatsoever in this experiment. All of the instructions provide examples and guidance for the actual tasks you will do. There will be no tricks. This experiment is about your ability to predict others' behavior. You will do a simple task and you will predict how many additional tasks other people would do for additional money. You will earn at least the fixed



payment of \$3. Depending on your ability to guess others' behavior, you may earn more. You must complete the session to earn any pay for this study. There will be absolutely no exceptions to this rule. All payments will be credited to your MTurk account within one week of completing the study.

## **Overview**

The experiment is simple. First, we want to make sure you understand the basic structure.

1. We will review the real-effort task and you will complete some tasks to help you learn.
2. We will interrupt you after 5 tasks and you will make a prediction about other people.
3. You will complete 15 additional tasks.
4. You will make two other predictions about other people.

You will know that you have reached the end of the survey when you see a screen saying "THIS IS THE END OF THE SURVEY". Please do not exit until you have seen this screen. This final screen includes a code that you must input into MTurk in order to get paid.

## **Predictions**

More than 500 people have already completed different versions of this experiment. In those other experiments, they simply completed tasks and we asked them their willingness to complete additional tasks for additional payment.

Specifically, we asked them "What is the maximum number of tasks you are willing to complete for \_?" where we inserted different amounts of money into the blank spot. We asked some people this question after they had completed 5 tasks. We asked other people this question after they had completed 20 tasks.

You will try to guess the average answer to this question. That is, you will guess how many tasks they were willing to do, and you will be given a bonus if you're correct.

In order to help you guess, over the next few slides you will work through the same instructions that the other participants did. You will also complete tasks like they did. Therefore, the total amount of time for the experiment for you should be similar to the total amount of time it took others.

## **Task**

The task in the experiment involves counting. You will see an image like the image below:

You will then be asked to count a specific character that is present in the image. The question will be phrased as: How many are in the picture?

Symbol to count: t

!	0	)	0	0	0	?	(	i	!	0	)	!!	!	0
!!	0	t	!	0	t	!	)	t	0	(	!	t	(	?
!	!	!	t	)	!	!	(	!	0	!	!	0	!	!!
!!	(	!	)	!	!	t	t	?	!	!	0	0	!	1
!	!	0	0	!	(	)	0	t	!	)	?	0	0	i
t	1	!	!	0	!	0	!!	!	t	!	!	!	!	0
t	!	(	!	!	0	!	(	(	!	!!	!	!	t	?
!	0	!	0	0	0	!	0	!	!	)	!	i	!	0
(	!	!	!	!	t	!	0	!	!	!	!	!	(	!
0	(	0	(	0	)	!	!	i	0	(	t	t	0	0

This means you should count how many “t” there are in the image.

The symbol that you will count will change in each image, so pay close attention. To make the task harder (and to prevent cheating) we have included two symbols that are very close to one another: ! and !!

These are different. So if you are asked to count ! in the image above, there are 61. If you are asked to count !!, there are only 6. Do not count !! when counting !

**PLEASE NOTE:** You must type the exact correct answer in order to advance to the next image. Counting each image should take about 30 seconds.

### Predictions and Overview

Some participants completed only five tasks. Others completed 20. You will guess about both.

As a reminder, the steps coming up are as follows:

1. You will complete 5 tasks in this initial block of work.
2. We will ask you about your prediction about others.
3. You will complete 15 more tasks.
4. We will ask you for two additional predictions.

When you click to advance to the next slide, you will begin.

*[Here, the participant completes five tasks.]*

### Predictions

In a moment, you will make your first prediction about others’ willingness to do additional tasks.

*[Alternate, Outgroup O<sub>-1</sub>: After you complete 15 more tasks, you will make predictions about others’ willingness to do additional tasks.]*

In order to give you more information about the specific questions we asked and the environment that others faced, you will work through very similar instructions to the instructions from our earlier experiments.

As a reminder: your goal will be to guess how many additional tasks a person was willing to do for some additional payment.

We will describe the method we used to ensure people in the previous experiments answered truthfully. It may seem complicated. But we'll walk through it step-by-step. The punchline: it was in their best interest to just answer truthfully.

Here's how the system works.

First, we asked them how many additional tasks (counting matrices) they were willing to do for a fixed amount of money.

Specifically, we asked questions of the form: "What is the maximum number of extra tasks you are willing to do for \$0.40?" This question meant that we would give them \$0.40 in exchange for completing some amount of additional work.

On the decision screen, they were presented with a slider that went between 0 and 100 tasks, and they also saw an amount of money next to the slider.

They would move the slider to indicate the maximal number of tasks they were willing to do for that amount of money.

That is, if they were willing to do 15 additional tasks but not 16, then they should have moved the slider to 15.

We then drew a random number between 0 and 100. If the person's answer was less than that random number, they did not do additional tasks and they received no additional payment.

However, if their answer was greater than or equal to that random number, they completed a number of additional tasks equal to the random number and received the additional payment.

Example: Suppose the person indicated they were willing to do 15 additional tasks for \$0.40. If the random number was 16 or higher, they would do no additional tasks. However, if the random number was 12, they would do 12 additional tasks.

While this may seem complicated, the punchline from this setup is that participants should have simply answered truthfully. We told them this in the same manner we have just told you.

We will now ask you to PREDICT how many additional tasks people were willing to do—on average—for an additional payment. Please pay attention to the amount of money involved in the question. You will make three predictions in this experiment, and the amount will change.

*[Alternate, Outgroup  $O_{-1}$ : You will now continue and complete 15 additional tasks. Afterwards, we will ask you to make two predictions. (Participant skips to \* below)]*

You are predicting about people who also completed five (5) tasks. That is, they completed 5 tasks, read instructions very similar to those you just completed, and then we asked their willingness to do additional tasks.

The next screen is the real question, so think carefully. If your guess is within 5 tasks of the correct answer, you will receive \$0.50

Think about people **who just completed five tasks**.

What do you think is the (average) maximal number of additional tasks they would be willing

to complete for \$2.00?: *[Alternate, Outgroup O: Think about people who just completed 20 tasks. What do you think is the (average) maximal number of tasks they would be willing to complete for \$3.00?]*

*[Slider here]*

We're curious how confident you are about your answer on the previous screen. Your answer to this question will not affect your pay.

Not at all A tiny bit So-so Fairly confident Extremely confident

You will now continue and complete 15 additional tasks.

*[\*Here, the participant completes 15 tasks.]*

Afterwards, we will ask you to make two other guesses. As of right now, you have earned \$3 for completing the tasks and for your overall participation in this study. In a few moments, we will ask you to make two additional predictions about others' willingness to complete additional work for additional pay.

This time, you will make predictions about two different groups of people: 1. You will PREDICT how many additional tasks people were willing to do after they completed a total of 20 tasks *[Alternate, Outgroup O, O<sub>-1</sub>: 5 tasks]*. That is, they completed 20 tasks and then we asked their willingness to do additional tasks.

2. You will PREDICT how many additional tasks different people were willing to do after they completed a total of 5 tasks *[Alternate, Outgroup O, O<sub>-1</sub>: 20 tasks]*. That is, they completed 5 tasks and then we asked their willingness to do additional tasks.

The few screens are the real questions, so think carefully. For each prediction, if your guess is within 5 tasks of the correct answer, you will receive \$0.50

Think about people who just completed twenty tasks.

What do you think is the (average) maximal number of additional tasks they would be willing to complete for \$3.00:

*[Slider here]*

We're curious how confident you are about your answer on the previous screen. Your answer to this question will not affect your pay.

Not at all A tiny bit So-so Fairly confident Extremely confident

Think about people who just completed five tasks.

What do you think is the (average) maximal number of additional tasks they would be willing to complete for \$2.00:

*[Slider here]*

We're curious how confident you are about your answer on the previous screen. Your answer to this question will not affect your pay.

Not at all A tiny bit So-so Fairly confident Extremely confident

Finally, imagine we asked you the following after completing 20 tasks. (Note that your answer to this question will not affect your pay, nor will you have to do any additional tasks).

What is the maximal number of additional tasks you would be willing to complete for \$3.00:

*[Slider here]*

Thank you for participating. This is the last screen before the MTurk code.

Your responses have been stored. Since others are completing this experiment at the same time as you and to avoid information becoming public, we won't tell you if you were correct at this time. Any bonus payments will be processed within one week.

Please click the final button below to submit your work.