

Model Uncertainty

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Supplementary Material: Experimental Instructions

F Instructions

F.1 Introduction

F.1.1 Welcome Screen and Attention Check

Welcome!

This study is designed for **computer (PC or Mac) users only** (desktop, laptop, etc.). If you are accessing this study on a smartphone, a tablet or any other non-PC devices, please switch to PC and enter the study again, or return the submission on Prolific.

Please write **at least 15 words** describing your opinion about daylight savings time. Whether you are in favor or against daylight savings does not affect your eligibility to participate in this study. However, we ask that you write at least 15 words on your thoughts about this topic.



F.1.2 General Instructions

General Instructions

Thank you for participating in this study.

Today's survey will take approximately 20 minutes. You will earn a reward of \$4.00 for participating (implying an hourly wage of \$12/hr).

To earn your reward, you have to **read all instructions carefully and correctly answer the comprehension questions.**

To receive your payment, it is crucial that you pay attention throughout the whole study!

Every tenth participant has the chance to get an **additional bonus of \$10.**

Feel free to use a piece of paper and pen during the study.



F.1.3 Bonus Information

Bonus

Today's survey consists of **two parts.**

If you are selected for the bonus, **an answer in one of the two parts will be randomly selected to determine your bonus.**

Therefore, you should answer all questions carefully.



F.2 Company Value Guesses

F.2.1 Instructions

Part 1 - Instructions

Basic Setting

In this study, you will need to guess the value of 8 different hypothetical companies. All companies have a value between 10 and 100.

There are two rules that generate estimates for the value of the companies. One of these rules will generate the correct estimate, the other will generate an incorrect and uninformative estimate. Both rules take different variables as inputs from which the estimates can be calculated.

These two rules are:

1. **"The CEO is key"**

Under the "The CEO is key" rule, the CEO competence **C** and supporting staff **S** are the only variables that matter.

The estimate under this rule is given by $C \cdot S - C - S + 10$.

2. **"Products are crucial"**

Under the "Products are crucial" rule, the number of products **P** and the research cost **R** are the only variables that matter.

The estimate under this rule is given by $P \cdot (10 - R) + R - P$.

The realizations of the variables are different for each company and are always between 0 and 10. The company value estimates under the two rules will also differ between companies and are always between 10 and 100.

Indication of the Correct Rule

At the beginning of the study, the computer will randomly determine with a fair coin flip which of the two rules generates correct estimates. Therefore, only either the "The CEO is key" or "Products are crucial" rule will generate correct estimates for all 8 companies.

Importantly, you will not learn the outcome of the coin flip directly. Instead, we will provide you with an indication for which rule is the correct one. This indication will give you an idea for which rule is more likely to produce correct estimates, but you will not learn the correct rule with certainty.

Versions of the Study

There are two versions of the study. After you have read the instructions, the computer will randomly assign you to one of these versions.

If you are assigned to **study version 1**, you need to calculate the company value estimates under both rules yourself. For each company, you can learn about the realizations of the different variables by hovering over the variable names, which can be plugged into the formulas to obtain the company value estimates under each rule. Then you need to provide a guess about the value of that company.

If you are assigned to **study version 2**, the company value estimates under both rules will be calculated for you. For each company, you can learn about the company value estimates under both decision rules by hovering over the name of the respective rule. Then you need to provide a guess about the value of that company.

Example (Study Version 1)

The following is an example for the information you will see on the decision screen if you are assigned to study version 1.

Hover over the elements below to display the formulas:

- "The CEO is key":
- "Products are crucial":

Hover over the elements below to display the variables which can be used to calculate the company value estimates under both rules:

- CEO competence **C**:
- Supporting staff **S**:
- Number of products **P**:
- Research cost **R**:

Given these variable realizations, the company value estimates can be calculated under each decision rule:

- Estimate for "The CEO is key": $C \cdot S - C - S + 10 = 5 \cdot 4 - 5 - 4 + 10 = 21$
- Estimate for "Products are crucial": $P \cdot (10 - R) + R - P = 7 \cdot (10 - 2) + 2 - 7 = 51$

Example (Study Version 2)

The following is an example for the information you will see on the decision screen if you are assigned to study version 2.

Hover over the elements below to display the company value estimates under each decision rule:

- Estimate for "The CEO is key":
- Estimate for "Products are crucial":

Bonus Payment

We will randomly select one of your 8 answers. **The closer your guess is to the correct value of the company, the higher the likelihood that you receive the bonus of \$10.**

If you click on the triangle below, the precise formula will be displayed. While this formula might seem complicated, the underlying principle is very simple: the smaller the difference between your estimate and the truth, the higher the likelihood that you win \$10. It is hence in your best interest to simply state your best guess.

Importantly, it does not directly matter for your earnings whether the company value is high or low. All that matters is that you guess it correctly. Your chance of receiving the bonus only depends on how close your guess is to the actual company value, which is not necessarily the higher one.



Likelihood of winning the bonus (in %) = $100 - 100 \cdot (\text{Value} + 100 - \text{Guess} + 100)^2$

F.2.2 Comprehension Questions

Comprehension Questions

Please answer the following comprehension questions. You need to answer them correctly to continue the study.

For how many companies will you need to provide a guess?

8

12

10

Which one of the following statements is correct?

The rule that generates correct company value estimates might differ between the companies.

A fair coin flip will determine which rule generates correct company value estimates. This rule will then be relevant for all companies.

Which one of the following statements is correct?

The guesses I make in this study can affect my payoff. The study involves real stakes.

The guesses I make in this study will not affect my payoff. The study is purely hypothetical.

The computer will secretly determine which rule generates correct company value estimates. Which of the following is true?

The computer is more likely to select "The CEO is key".

The computer is more likely to select "Products are crucial".

Both rules are equally likely.

In the example of study version 1, what is the variable realization for **Number of products P?**

What is true regarding your chance of winning the 10\$ bonus?

The chance of getting the bonus is highest when I guess the larger of the two estimates proposed by the two rules.

The chance of getting the bonus is highest when I state the guess that is closest to the true company value, which is not necessarily the higher of the two estimates.

The chance of getting the bonus is highest when I guess the sum of the two estimates proposed by the two rules.



F.2.3 Example Decision Screens for Selecting Restricted Sample

You passed the comprehension questions!

Before the actual tasks start, we give you the opportunity to familiarize yourself with the calculations of study version 1 on the next two pages.

This is not an additional comprehension check, but you can use the opportunity to get familiar with the calculations.



Example for Study Version 1

Hover over the elements below to display the formulas:

- "The CEO is key": $C \cdot S - C - S + 10$
- "Products are crucial":

Hover over the elements below to display the variables which can be used to calculate the company value estimates under both rules:

- CEO competence **C**:
- Supporting staff **S**:
- Number of products **P**:
- Research cost **R**:

What is the company value estimate under the rule "The CEO is key"?

(Your response needs to lie between 10 and 100.)



Example for Study Version 1

Hover over the elements below to display the formulas:

- "The CEO is key":
- "Products are crucial":

Hover over the elements below to display the variables which can be used to calculate the company value estimates under both rules:

- CEO competence **C**:
- Supporting staff **S**:
- Number of products **P**:
- Research cost **R**: 5

What is the company value estimate under the rule "Products are crucial"?

(Your response needs to lie between 10 and 100.)



F.2.4 Treatment Assignment - HighComplexity

Study Version

The computer has assigned you to study version 1, which means you need to calculate the company value estimates under both decision rules yourself.

F.2.5 Treatment Assignment - LowComplexity

Study Version

The computer has assigned you to study version 2, which means the company value estimates under both decision rules will be calculated for you.



F.2.6 Determining the Correct Rule

Determination of the Rule

Next, the computer will flip a fair coin to secretly determine which of the two rules - "**The CEO is key**" or "**Products are crucial**" - will generate the correct value estimates for all 8 companies.

Please click on "Flip the coin!" to proceed.

Flip the coin!

F.2.7 Timeline - HighComplexity

Timeline

- The computer has now flipped a fair coin to determine which of the two rules - "The CEO is key" or "Products are crucial" - generates the correct value estimates. We will next provide you with an indication about which rule has been selected.
- For each of the 8 companies, you can see the realizations of the four variables - CEO competence C, supporting staff S, number of products P, research cost R - by hovering over the variables on the decision screen. You can also remind yourself of the formulas for both rules by hovering over them. You then need to provide a guess about the value of that company.



F.2.8 Timeline - LowComplexity

Timeline

- The computer has now flipped a fair coin to determine which of the two rules - "Products are crucial" or "The CEO is key" - generates the correct company value estimates. We will next provide you with an indication about which rule was selected.
- For each of the 8 companies, you can directly see the company value estimates under both rules - "Products are crucial" and "The CEO is key" - on the decision screen. You then need to provide a guess about the value of that company.



F.2.9 Drawing the Signal

Indication about the Rule

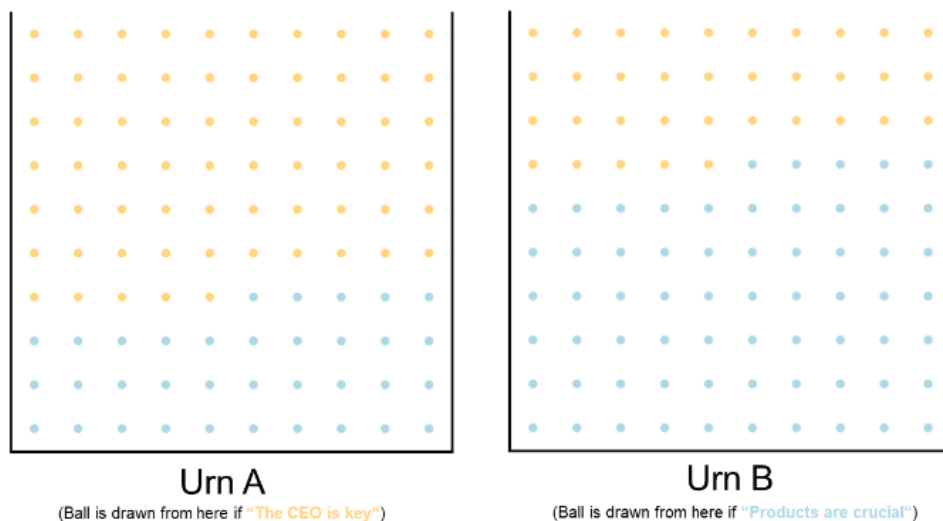
The computer has secretly flipped a coin to determine which of the two rules - **"The CEO is key"** or **"Products are crucial"** - generates the correct company value estimates.

On the next page, you will observe an indication for which of the two rules was randomly chosen.

You will get this information in the form of a ball that is drawn from one of the two urns displayed below.

- If **"The CEO is key"** generates correct estimates, the computer will draw a single ball from **Urn A**, which contains **65 orange balls and 35 blue balls**.
- If **"Products are crucial"** generates correct estimates, the computer will draw a single ball from **Urn B**, which contains **35 orange balls and 65 blue balls**.

This means that a **orange ball** is rather indicative of **"The CEO is key"**, and a **blue ball** is rather indicative of **"Products are crucial"**. Notice again that these are only indications, **you will not know with certainty which rule has been selected** by the computer.



Draw the ball!

F.2.10 Signal Screen - CEO is key

The drawn ball is orange, which means "**The CEO is key**" is more likely to generate correct estimates.



You can proceed to the next screen in 15 seconds.

F.2.11 Signal Screen - Products are crucial

The drawn ball is blue, which means "**Products are crucial**" is more likely to generate correct estimates.



You can proceed to the next screen in 15 seconds.

F.2.12 Signal Check

To verify that you have observed the indication, please choose the correct statement below.

The rule "**The CEO is key**" is more likely to generate correct estimates

The rule "**Products are crucial**" is more likely to generate correct estimates



F.2.13 Decision Screen - HighComplexity

Company 1/8

Hover over the elements below to display the formulas:

- "The CEO is key":
- "Products are crucial":

Hover over the elements below to display the variables which can be used to calculate the company value estimates under both rules:

- CEO competence **C**: 9
- Supporting staff **S**:
- Number of products **P**:
- Research cost **R**:

What is your guess for the value of the company?

(Your response needs to lie between 10 and 100.)



The formulas and variable realizations were displayed upon hovering over the respective text.

F.2.14 Decision Screen - LowComplexity

Company 1/8

Hover over the elements below to display the company value estimates under each decision rule:

- Estimate for "Products are crucial":
- Estimate for "The CEO is key": 25

What is your guess for the value of the company?

(Your response needs to lie between 10 and 100.)



The pre-calculated company value estimates were displayed upon hovering over the respective text.

F.3 Beliefs

F.3.1 Instructions

Part 2 - Instructions

You have just guessed the values of companies. Either the **"The CEO is key"** rule or the **"Products are crucial"** rule generated correct company value estimates.

In this part, we ask you to state which of the two rules generated the correct company value estimates. Specifically, we will **ask you for the probability (between 0 and 100%) that "The CEO is key" generated correct estimates**. The closer your guess is to the correct answer, the higher is your chance to win the \$10 bonus.

If you wish, you can click on the triangle to uncover the precise formula for the bonus implied by your probability guess. However, you only need to know that it's in your best interest to simply state your best guess.



Likelihood of winning the bonus (in %) = $100 - 100 \cdot (\text{Truth} - \text{Guess})^2$

"Truth" is 1 if **"The CEO is key"** is the correct rule, and 0 if **"Products are crucial"** is the correct rule.

"Guess" is your guess for the likelihood (in %) that **"The CEO is key"**.



F.3.2 Decision Screen

In the first part, which of the two rules - "The CEO is key" or "Products are crucial" - generated correct company value estimates?



"The CEO is key": 34%.



"Products are crucial": 66%.



F.3.3 Confidence Elicitation

You guessed that the likelihood for **"The CEO is key"** is 34%.

How certain are you that this answer is within 10 percentage points of the best possible guess given the information you received in the first part?

(This question does not affect your bonus.)



F.3.4 Direct Recall

In the first part, before providing guesses for the company values, you received an indication for which rule was selected by the computer to generate correct company value estimates.

Do you recall which rule was indicated to be more likely to generate correct value estimates?

(This question does not affect your bonus.)

"The CEO is key"

"Products are crucial"

I don't remember

