Supplementary material

Appendix A contains a translated version of the instructions for the second experiment (originally in French). The instructions for the first experiment were identical except for the predictions part. Appendix B contains additional figures.

Appendix A. Instructions

Welcome

This is an experiment about interdependent decision making. The instructions are simple and if you follow them and make good decisions, you may earn a considerable amount of money. Your earnings will depend partly on your decisions and partly on chance. All of your decisions will be treated in an anonymous manner and they will be gathered across a computer network. You will input your choices on the computer you are seated in front of and the computer will indicate your earnings to you as the experiment proceeds. The total amount of money that you earn in the experiment will be given to you in cash at the end of the experiment. At this time, we will give you 15 francs. This payment is to compensate you for showing up on time.

Before beginning the experiment, you must fill out a questionnaire intended to evaluate your comprehension of the instructions. If your answers indicate that you have not understood the following instructions well enough, you will not be able to take part in the experiment. If this occurs, we will ask you to leave and you will receive 30 francs at the exit (which includes the 15 francs of show-up fee).

One of you will be designated at random to assist the experimenters during the session. This person will be referred to as the assistant in the remainder of these instructions. The assistant will read the instructions aloud, will observe how the session is proceeding to assure you that we are respecting the instructions, and, as described later, will help us by making random draws. The assistant will receive a final payment equal to the average amount paid to the participants. We will now assign each of you a number, and we will throw a multisided die to select the assistant.

General Setting of the Experiment

16 people will participate in the experiment. Two groups of participants will be formed at random at the beginning of the experiment. The first group consists of 9 participants and is referred to as the "blue line". The second group consists of 7 participants and is referred to as the "green line". After the instructions have been read aloud, you will be privately informed whether you are part of the "blue line" or the "green line". There will be no way for you to identify which of the other participants are in your group, because they can be seated anywhere in the room. The composition of the two groups of participants will be the same during the entire experiment.

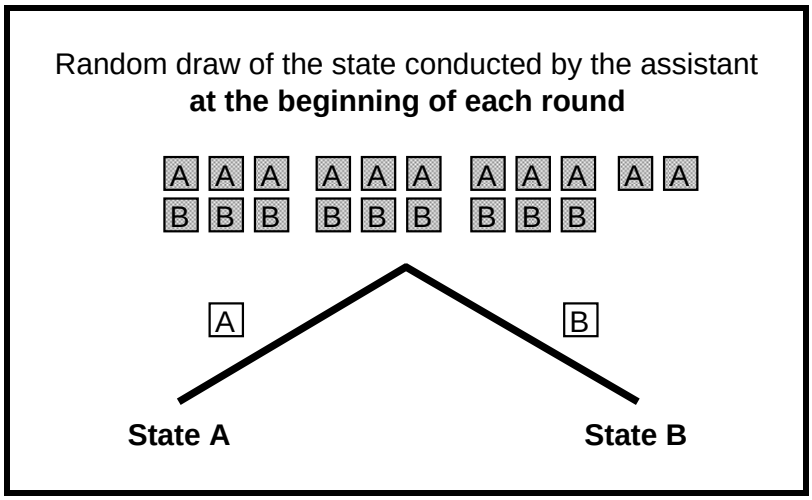
The experiment will consist of **15 rounds**. Each round is divided into 9 periods. In each period, one of the participants in the "blue line" will be required to choose between "action A" and "action B" and his choice will be observed by the participants in the "blue line" and by the participants in the "green line". Each participant in the "blue line" will make exactly **one choice per round**. In each of the seven periods from period 3 to 9, one of the participants in the "green line" will be required to choose between "action A" and "action B" and his choice will not be observed by any other participant. Each participant in the "green line" will make exactly **one choice per round**.

In each round, the period in which you will make your choice will be determined at random. Your choice translates either into earnings or losses at the end of each round. Furthermore, over the course of **each round**, you will be required to make a certain **number of predictions**. Your predictions will lead to *bonus earnings* at the end of each round.

The rest of the instructions details the procedures of the experiment.

How Each Round Operates

Each rounds begins with a random draw of a state from the two possible states. The state drawn at random will be either **state A** or **state B**. The assistant will conduct the random draw of the state. The procedure for conducting the random draw is the following. One of the experimenters will shuffle a deck of 20 cards and lay them face down on the table in front of the assistant. Out of the 20 cards, 11 cards are marked with "A" and 9 cards are marked with "B". The assistant will then choose 1 card out of the 20 cards. If the chosen card is marked "A" then the state drawn at random for the current round is state A. If the chosen card is marked "B" then the state drawn at random for the current round is state B. At the beginning of each round, the chance that state A will be chosen is 55% and the chance that state B will be chosen is 45%. For each round, **you will not know which state the assistant drew until the end of the round**.



Period of Choice and Observation of Past Choices Made in the "Blue Line"

Once the state has been randomly drawn by the assistant, each participant (including yourself) will be assigned a period of choice. **In each of the 9 periods**, **one participant in the "blue line" will choose** between "action A" and "action B". During the course of the current round, the actions chosen by the participants in the "blue line" will be displayed on each participant's computer screen. **In each of the seven periods from period 3 to 9**, **one participant in the "green line" will choose** between "action A" and "action B" and the chosen action will NOT be displayed on any other participant's computer screen.

As a first illustration, assume that you are part of the "blue line" and that you have been assigned to period 1: You will be the first participant to choose between "action A" and "action B" and the 15 other participants will observe the action you have chosen; In the remaining periods of the current round, you will not make any additional choice but you will observe the choices which will be made in period 2, 3, ..., 9 by the eight remaining participants in the "blue line". As a second illustration, assume that you are part of the "blue line" and that you have been assigned to period 6: You will observe the actions chosen by the participants in the "blue line" who have been assigned to periods 1, 2, 3, 4 and 5; In period 6, you will have to choose between "action A" and "action B" and the 15 other participants will observe the action you have chosen; In the remaining periods of the current round, you will not make any additional choice but you will observe the choices which will be made in period 7, 8 and 9 by the three remaining participants in the "blue line". As a third illustration, assume that you are part of the "green line" and that you have been assigned to period 3: You will observe the actions chosen by the participants in the "blue line" who have been assigned to periods 1 and 2; In period 3, you will have to choose between "action A" and "action B"; None of the other 15 participants will

observe the action you have chosen; In the remaining periods of the current round, you will not make any additional choice but you will observe the choices which will be made in periods 3, 4, ..., 9 by the seven remaining participants in the "blue line". Finally, as a fourth illustration, assume that you are part of the "green line" and that you have been assigned to period 8: You will observe the actions chosen by the participants in the "blue line" who have been assigned to periods 1, 2, 3, 4, 5, 6 and 7; In period 8, you will have to choose between "action A" and "action B"; None of the other 15 participants will observe the action you have chosen; In the last period of the current round, you will not make a choice but you will observe the choices which will be made in periods 8 and 9 by the two remaining participants in the "blue line".

In each round, the order in which the 9 participants in the "blue line" choose between "action A" and "action B" is randomly determined. Similarly, in each round, the order in which the 7 participants in the "green line" choose between "action A" and "action B" is randomly determined.

Private Information

To help you making your choices you will have some partial private information about the state the assistant has randomly drawn at the beginning of the round. This private information will be revealed to you at the beginning of the period in which you make your choice. Your private information is the result of a random draw from an urn. If you are part of the "blue line" then the urn contains 3 balls. If you are part of the "green line" then the urn contains 5 balls. As explained below, the exact composition of the urn depends on the state the assistant has drawn at random at the beginning of the round.

Private Information in the "Blue Line"

If you are part of the "blue line" then the urn from which your private information is drawn contains 3 balls. More precisely,

- if the state is **state A** then the urn from which your private information is drawn at random contains **2 balls marked "a"** and **1 ball marked "b"**, whereas
- if the state is **state B** then the urn from which your private information is drawn at random contains **2 balls marked "b"** and **1 ball marked "a"**.

Private Information in the "Green Line"

If you are part of the "green line" then the urn from which your private information is drawn contains 5 balls. More precisely,

- if the state is **state A** then the urn from which your private information is drawn at random contains **4 balls marked "a"** and **1 ball marked "b"**, whereas
- if the state is **state B** then the urn from which your private information is drawn at random contains **4 balls marked "b"** and **1 ball marked "a"**.

In summary, whether you are part of the "blue line" or the "green line", your private information will consist of either one ball marked "a" or one ball marked "b". At the beginning of the period in which you make your choice, you will proceed with the random draw of your private information by clicking on a button on your computer screen. The number of balls contained in the urn and the result of the draw will be displayed on your screen. **You will be the only one to know the result of your own private information draw**. The exact composition of the urn will NOT be displayed on your screen.

Payment for Choices Made

In each round, if you choose "action A" and the state drawn at random by the assistant is **state A** then you earn 10 francs. Similarly, if you choose "action B" and the state drawn at random by the assistant

is **state B** then you earn 10 francs. On the contrary, if you choose "action A" and the state drawn at random by the assistant is **state B** or if you choose "action B" and the state drawn at random by the assistant is **state A** then you loose 5 francs. The table below summarizes your possible earnings and losses in a given round depending on the action you chose and the state draw at random by the assistant.

	The state drawn at random by the assistant is	
	state A	**state B**
You choose "action A"	10 francs	- 5 francs
You choose "action B"	- 5 francs	10 francs

Bonus: Making Predictions

Over the course of each round, in addition to your choice "action A" or "action B", you must submit a certain number of predictions. In each period, the computer will ask you for a prediction which consists of two percentages. First, you must indicate what is, according to you, the percentage chance that **state A** is the state which has been randomly draw by the assistant at the beginning of the round. Second, you must indicate what is, according to you, the percentage chance that **state B** is the state which has been randomly draw by the assistant at the beginning of the round. These two percentages make up your prediction. The percentages that you enter must be expressed in the form of whole numbers and the two percentages must add up to 100%. The predictions of a given participant will not be observed by any other participant.

The way in which you will earn money for your predictions is summarized in the table included in the appendix of these instructions. The table has been constructed on the basis of a mathematical formula that it is not necessary to know. Remember simply that your *bonus earnings* from your predictions are maximized if you honestly indicate your predictions. In other words, the farther your predictions are from what you really think, the fewer francs you will obtain on average (the proof is available and you may ask for it at the end of the experiment). In each period, your bonus earnings will be between 0 and .25 francs.

Final Remarks

In each round, you will either earn 10 francs or loose 5 francs depending on the action you choose and the state randomly drawn by the assistant. In addition, you will get *bonus earnings* from your predictions. At the end of the experiment, the total amount of money that you have earned in the 15 rounds will be given to you in cash.

At any time during the experiment, you may access some information about the previous rounds (choices in the "blue line", in which period you chose, your private information, and your earnings or losses) by clicking on the *history button*.

If you would like to ask a question, raise your hand and an experimenter will come to you and answer it individually. Otherwise, please do not talk during the experiment.

Before the experiment, please complete a small questionnaire on your computer. This is to verify your comprehension of the procedure. Afterwards, you will participate in a practice round that will not count toward your earnings. You will not make any of your own decisions in the practice round. Instead, the assistant will announce the decisions that have to be taken during the practice round. The practice round will allow you to familiarize yourself with the environment described in these instructions.

Good Luck!

Appendix: Bonus Earnings from Making Predictions

In each round, you must submit a certain number of predictions. When the computer at which you are seated prompts you to indicate your prediction for a given period, you must enter two percentages:

- the percentage chance that, in your opinion, **state A** is the state which has been randomly draw by the assistant at the beginning of the round, and
- the percentage chance that, in your opinion, **state B** is the state which has been randomly draw by the assistant at the beginning of the round.

The percentages that you enter must be expressed in the form of whole numbers (no decimals and no fractions) and the two numbers must add up to 100%. The table below shows how different pairs of percentages correspond to earnings in cents. Because of lack of space, we do not vary the percentages by all possible increments but only by 10% increments. However, when making your predictions you can enter numbers with a level of precision of 1% (for example, (98%, 2%), (63%, 37%), (46%, 54%), or (15%, 85%)).

Predictions		Earnings in cents	
Percentage chance that the assistant has randomly drawn		At the beginning of the round, the assistant has randomly drawn	
state A	**state B**	**state A**	**state B**
0%	100%	0.00	25.00
10%	90%	4.75	24.75
20%	80%	9.00	24.00
30%	70%	12.75	22.75
40%	60%	16.00	21.00
50%	50%	18.75	18.75
60%	40%	21.00	16.00
70%	30%	22.75	12.75
80%	20%	24.00	9.00
90%	10%	24.75	4.75
100%	0%	25.00	0.00

Recall that **your average earnings from making predictions are maximized if you honestly indicate your predictions**. The example below will, we hope, convince you of this.

Example: If you think that the percentage chance that **state A** is the randomly drawn state equals 10% and the percentage chance that **state B** is the randomly drawn state equals 90%, you will earn 4.75 cents if **state A** is the randomly drawn state and 24.75 cents if **state B** is the randomly drawn state. **The earnings you will receive on average are equal to 10% × 4.75 + 90% × 24.75**, which is approximately **22 cents**.

If, in contrast to an honest prediction, you enter that the percentage chance that **state A** is the randomly drawn state equals 80% and the percentage chance that **state B** is the randomly drawn state equals 20%, your earnings will be 24 cents if **state A** is the randomly drawn state and 9 cents if **state B** is the randomly drawn state. Nevertheless, in reality, you believe that the percentage chance that **state A** is the randomly drawn state equals 10% and the percentage chance that **state B** is the randomly drawn state equals 90%. Then the earnings that you will receive if your belief is correct are on average 10% × 24 + 90% × 9, which is approximately 11 cents.

Therefore, by entering a prediction different from your honest one, you would lose earnings equal to 11 cents for the given period. Naturally, if the predictions that you enter on your computer are even farther away from what you really believe, you would lose even more money on average.

Appendix B. Cascade Behavior and Cascade Break

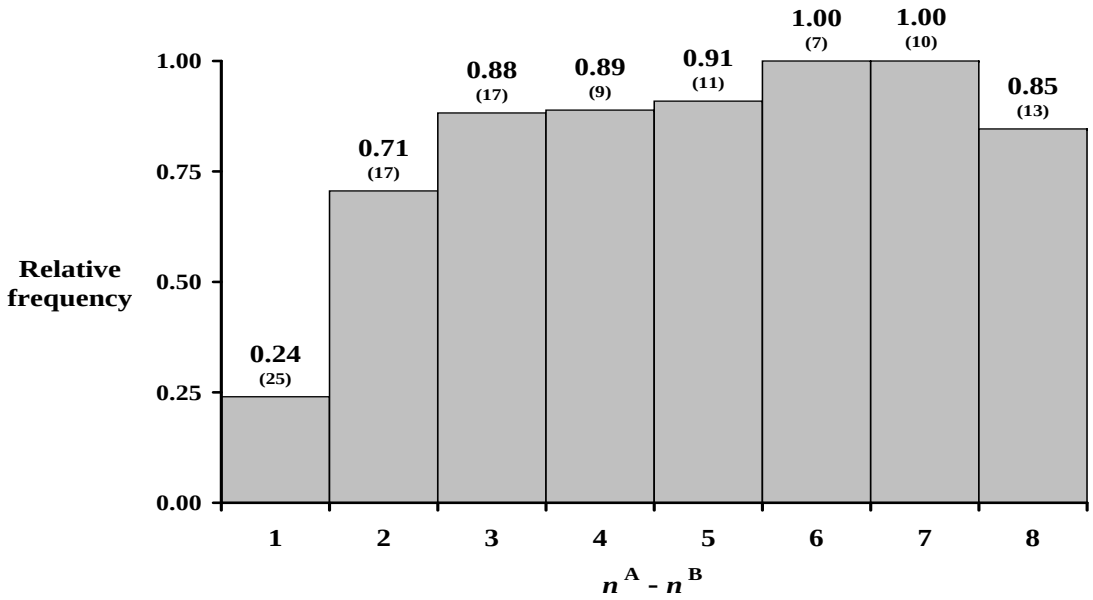


Figure 1: Relative frequencies of cascade behavior in A cascades.

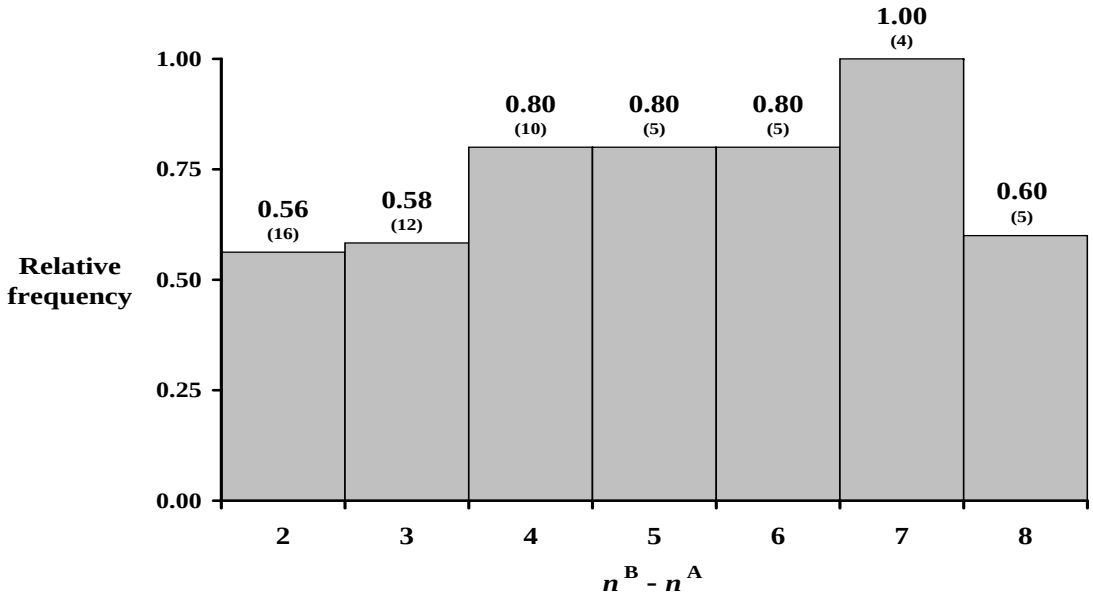


Figure 2: Relative frequencies of cascade behavior in B cascades.

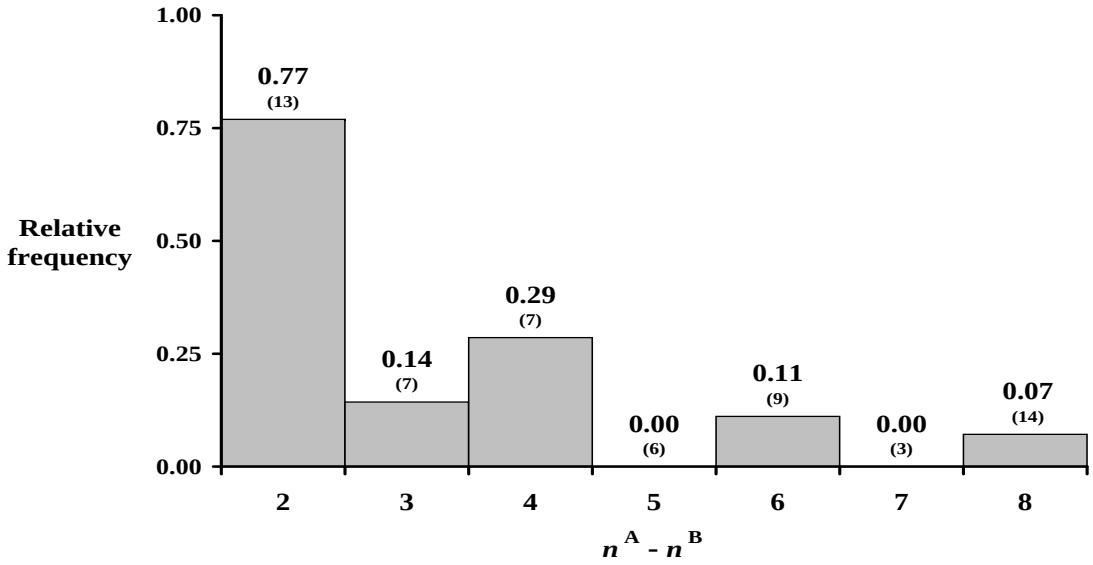


Figure 3: Relative frequencies of cascade break in A cascades.

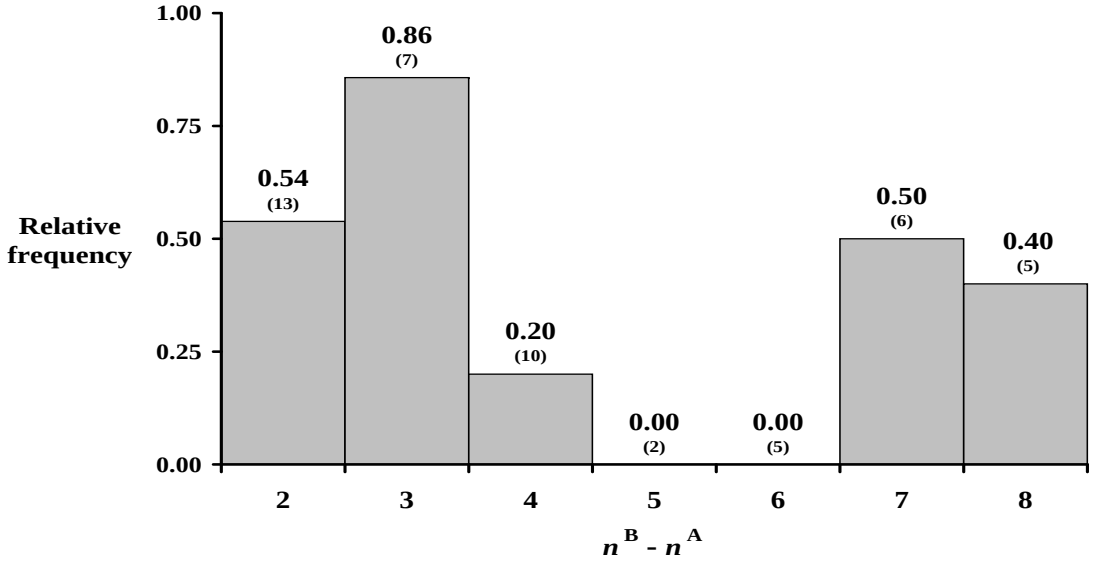


Figure 4: Relative frequencies of cascade break in B cascades.