Defaults, normative anchors, and the occurrence of risky and cautious shifts

Online Appendix

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A Proof of Corollary 1

Take two distinct prospects R, S with outcomes in the joint support of the two prospects denoted 1,...,n in weakly increasing order of preference. Let S be a degenerate lottery yielding outcome $s \in \{2, ..., n-1\}$ with certainty. Let $u(i)$ denote the decision maker's utility from outcome i. Denote by p_i^R, $i \in \{1, ..., n\}$ the probability R places on outcome i. W.l.o.g. assume that $p_i^R > 0$, $i \neq s$. As in the numerical examples in section 2, let $r_i = \sum_{j=i+1}^{n} p_j$ be the (gain) rank of outcome i. Let R'_b, S'_b be the compound lotteries for group-decision problem $\mathbf{g} = (a, b)$. In the proof of their theorem, ERR show that

$$\mathrm{RDU}(R'_b) - \mathrm{RDU}(S'_b) = \sum_{i=2}^{n} T_i c(i)$$

where $c(i) = u(i-1) - u(i)$ and

$$T_i = \begin{cases} w(\lambda r_{i-1} + 1 - \lambda) - w([a+\lambda] r_{i-1} + 1 - [a+\lambda]), & i \leq s \\ w(\lambda r_{i-1}) - w([a+\lambda] r_{i-1}), & i > s \end{cases}$$

with $\lambda = (1-a)(1-b)$.

Now assume $R \sim_i S$. By ERR's theorem, we know that $b^* \in (0,1)$ and consequently $R'_0 \succ_i S'_0$ and $S'_1 \succ_i R'_1$. We show that there are prospects $\widehat{R}^{\alpha}$, $\widehat{R}^{\beta}$ such that $\widehat{R}^{\alpha} \succ_i S$, $S \succ_i \widehat{R}^{\beta}$ and $S'_{b_\alpha} \succ_i \widehat{R}^{\alpha\prime}_{b_\alpha}$ (cautious shift), $R^{\beta\prime}_{b_\beta} \succ_i \widehat{S}_{b_\beta}$ (risky shift) for $b_\alpha, b_\beta \in (0,1)$.
Let $\widehat{R}$ be the prospect we receive by replacing n with some outcome $\widehat{n}$ such that $u(\widehat{n}) = u(n) + \varepsilon$. We have

$$\begin{aligned} \mathrm{RDU}(\widehat{R}'_b) - \mathrm{RDU}(S'_b) &= \sum_{i=2}^{n} T_i c(i) - \varepsilon T_n \\ &= \mathrm{RDU}(R'_b) - \mathrm{RDU}(S'_b) + \varepsilon \left[w([a+\lambda] p_n) - w(\lambda p_n) \right] \end{aligned}$$

Now set $b = 1$ ($\Rightarrow \lambda = 0$). We receive

$$\mathrm{RDU}(\widehat{R}'_1) - \mathrm{RDU}(S'_1) = \mathrm{RDU}(R'_1) - \mathrm{RDU}(S'_1) + \varepsilon w(a p_n)$$

Similarly, for $b = 0$ ($\Rightarrow \lambda = 1 - a$), we receive

$$\mathrm{RDU}(\widehat{R}'_0) - \mathrm{RDU}(S'_0) = \mathrm{RDU}(R'_0) - \mathrm{RDU}(S'_0) + \varepsilon \left[w(p_n) - w([1-a] p_n) \right]$$

(i) Cautious Shift

For a cautious shift to occur at some $b \in (0,1)$, we need $\widehat{R} \succ_i S \Leftrightarrow \varepsilon > 0$ and

$$\begin{gathered}\mathrm{RDU}(\widehat{R}'_1) - \mathrm{RDU}(S'_1) < 0 < \mathrm{RDU}(\widehat{R}'_0) - \mathrm{RDU}(S'_0) \Leftrightarrow \\ \mathrm{RDU}(R'_1) - \mathrm{RDU}(S'_1) + \varepsilon w(ap_n) < \mathrm{RDU}(R'_0) - \mathrm{RDU}(S'_0) + \varepsilon\left[w(p_n) - w([1-a]p_n)\right]\end{gathered}$$

By $S'_1 \succ_i R'_1$ and $R'_0 \succ_i S'_0$, the set of admissible values for ε is non-empty.

(ii) Risky Shift

For a risky shift to occur at some $b \in (0,1)$, we have the same conditions except for $S \succ_i \widehat{R} \Leftrightarrow \varepsilon < 0$. B the same reasoning as for cautious shifts, the set of admissible values for ε is non-empty.

□

B Distribution of Majorities for Part-1 Problems

With our choice of gambles (cf. subsection 3.1), we aimed to trigger disagreement among group members for as many items in part 1 as possible. Table B.1 shows the distribution of majorities we ended up with. As we see, three-to-two majorities represent the most frequent constellation in our sample. Votes are overall skewed towards the safe choices (median at 2). Unanimity occurs quite rarely.

Table B.1: Distribution of Per-Group Majorities in Part 1

	# of votes f. risky choice					
	0	1	2	3	4	5
Ctrl.	8	18	19	11	8	2
Treat.	2	15	23	10	8	2
Total	10	33	42	21	16	4

C Instructions

All instructions were computerized. In addition, subjects received a paper summary of the instructions for part 2.

C.1 General Instructions

These general instructions were shown to all participants at the start of each session.

Welcome to this study!

In this experiment, you will make choices involving actual monetary payoffs. The payoffs may depend on your decisions and the realization of random events. The experiment will consist of two parts. Before each part of the experiment, you will be given a detailed explanation of how your decision will matter for your payoff. During the experiment you will be asked to answer a number of choice problems. You will go through these one by one. There will be a total of 18 choice problems. The first part consists of 6 decisions and the second part consists of 12 decisions. There are no right or wrong choices in any decision that you will make in this experiment. For each decision, the best you can do is to simply choose the alternative that - all things considered - seems best to you.

Your earnings in this experiment will be determined in the following way. You will receive a payoff of 5 € for participating. In addition, you may earn money with your decisions. Not every decision will be paid in the experiment. At the end of the experiment, one of the 18 choice problems will be selected at random, and you will receive a payment according to the decision for this problem. You will not earn money for the other choice problems. Each choice problem has equal chance of being selected for payment.

In this experiment, you will be in a group of 5 people. Your group is group 1 and you are player 1. Your decisions in part 2 of the experiment may have consequences for other members in your group, and the decisions of the others may have consequences for you. Only in the instructions of part 2 you will be informed whether this is actually be the case.

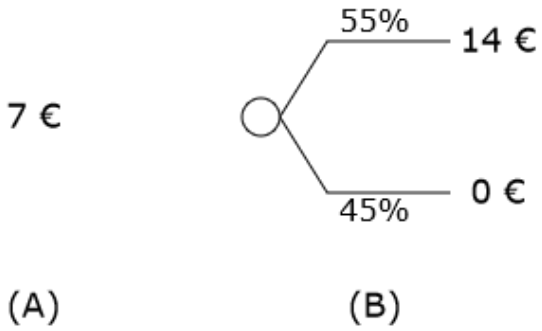
You will be in a group with the participants who are seated at tables 1, 2, 3, 4, and 5. Before the experiment, you will have 3 minutes to chat with these participants. In the chat, you may introduce yourself to the others, and you may discuss anything that you want (but not threaten others). You can now stand up to see who the other participants in your group are.

C.2 Part-1 Instructions

These with an example problem were shown to all participants after the 3-minute chat for their group was completed.

Part 1: Instructions

In part 1, you will be presented 6 different choice problems. In each of these problems, you have to choose one of two options. One will be a safe amount of money, the other a lottery that can yield both higher and lower money amounts than the safe alternative with positive probability. As an example, consider the following choice problem:



Here, option (A) gives you 7 € for sure and option (B) gives you 14 € with 55 % probability and 0 € with 45 % probability. If you choose option B and this problem is selected for payment, a random draw generated by a (computerized) wheel of fortune will determine the amount that is paid out. The wheel of fortune will exactly implement the stated probabilities.

C.3 Part-2 Instructions

These instructions, including an example problem and practice questions, were presented to participants at the start of part 2. Text in curly brackets was only included in the indicated treatment:

Part 2: Instructions

For this part, you will receive a paper summary of the instructions.
In part 2, you will be presented 12 different choice problems in 12 rounds. You will now be making decisions as part of the group of 5 participants that you were introduced to at the start of the experiment.
The choice problems for part 2 are all based on the problems you completed in part 1. They may appear in a different order, though. For each problem, there will now be a preset default option. The default option will be implemented with 60% probability. Sometimes, the default option will

be the option that most members of your group chose in the corresponding problem in part 1. In other cases, it will correspond to the choice made by the minority of the members of your group. In either situation, we will clarify how the default option came about. Your decision for a choice problem will only matter if the default option is not implemented. You will then have the following options:

- Stay with the default option.
- Deviate from the default option.

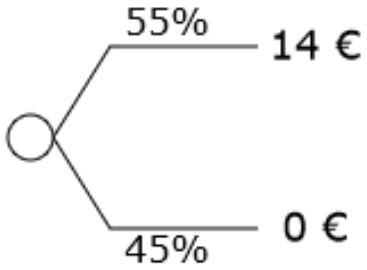
{Control: Apart from this, the rules of this part are the same as in part 1. In particular, your decision on any problem of part 2 will not affect the payoff for any other group member.
Similarly, another group member's decision in this part will not affect your payoff. Also, your decisions in part 2 will not be communicated to any other group member and likewise you will not be informed of any decision that any other group member takes in part 2.**}**
{Treatment: As opposed to part 1, in part 2 you make decisions on behalf of all the members of your group. This means that your decision is implemented for each group member, and that each group member receives the same payoff as you do if the particular problem and your decision are selected for payment at the end of the experiment. In that case, each group member will receive information about the choice problem, your decision, about the default and about how the default was determined. Also, it will be made clear to the other group members that you were the one deciding on behalf of the group.
Similarly, your fellow group members will answer the same problems in this part and their decisions may be selected to determine every group member's payoff in the end. In that case, you will receive detailed information on the corresponding problem, the decision and the identity of the group member who made the decision.
If a problem of this part gets selected for payment, the decisions of all group members will have equal probability of being implemented for the group.**}**
To make you familiar with these rules, we present you an example on the next page. The assumed choices for the example were arbitrarily determined.
{New Page}

Example Problem:
The default choice for this problem is the option that the majority of the members of your group chose in the preceding part. If you deviate from the default, you will receive the alternative choice with 40% probability and the default otherwise. **{Treatment:** Recall that your decision will matter for all group members in case it is implemented.**}**
Your decision:

The default choice for this period is:

- Take the default.

The alternative choice is:



- Deviate from the default.

Explanation:
Here, the default option is a safe payment of 7 €. Also, the majority of the members in your group chose the safe payment in the corresponding problem in part 1.
{Control: Now let us assume that your choice is implemented. If you choose to take the default, you will receive 7 € with certainty. Or suppose you choose to deviate from the default. Then you receive the alternative choice with 40% probability and the default otherwise. I.e., with 60% probability, you receive 7 € and with 40% probability you receive receive a lottery where you get 14 € with 55% probability and 0 € otherwise.
So overall, the following three outcomes are possible:

- You receive 7 € (when the default is implemented)
- You receive 14 € (when the default is not implemented and the good outcome occurs)
- You receive 0 € (when the default is not implemented and the bad outcome occurs)**}**

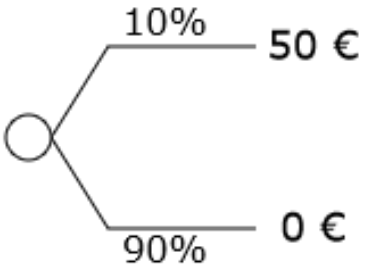
{Treatment: Now let us assume that your choice is implemented for the group. If you choose to take the default, each group member will receive 7 € with certainty. Or suppose you choose to deviate from the default. Then each group member receives the alternative choice with 40% probability and the default otherwise. I.e., with 60% probability, each group member receives 7 € and with 40% probability each group member receives a lottery where she/he gets 14 € with 55% probability and 0 € otherwise.
So overall, the following three outcomes are possible:

- Each group member receives 7 € (when the default is implemented)

- Each group member receives 14 € (when the default is not implemented and the good outcome occurs)
- Each group member receives 0 € (when the default is not implemented and the bad outcome occurs)**}**

To test your understanding of the setup, we prepared a practice problem with some questions. As for the above example, the assumed choices in the practice problem are arbitrarily chosen.
{New Page}

The default choice for this period is:



The alternative choice is:

5 €

The default choice for this problem is the option that the minority of the members of your group chose in the preceding part. If you deviate from the default, you will receive the alternative choice with 40% probability and the default otherwise. **{Treatment:** Recall that your decision will matter for all group members in case it is implemented.**}**
Your decision:

- Take the default.
- Deviate from the default.

Please answer the questions below.

(1) Does the default outcome for a problem in this part always represent the majority choice for the respective problem in part 1?

(2) How many decision problems does part 2 have?

(3) Assume you choose to deviate from the default and that this problem gets implemented. What is the probability that you receive 5 €?

{Treatment:

(4) If your choice on a given problem matters for the group's payoffs, will the other group members be informed that you were the one who determined the decision?

(5) If your choice on a given problem matters for the group's payoffs, will the other members of your group receive the same payoff as you do?**}**