

Anomalous Behavior in a Traveler's Dilemma?

Instructions and Data Appendices

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The instructions reproduced here are for the $R = 50$ treatment, for Part A. The data appendix follows the instructions.

Appendix A: Instructions for Part A

You are going to take part in an experimental study of decision making. The funding for this study has been provided by several foundations. The instructions are simple, and by following them carefully, you may earn a considerable amount of money. At this time, you will be given \$6 for coming on time. All the money that you earn subsequently will be yours to keep, and your earnings will be paid to you in cash today at the end of this experiment. We will start by reading the instructions, and then you will have the opportunity to ask questions about the procedures described.

Earnings

The experiment consists of a number of periods. In each period, you will be randomly matched with another participant in the room. The decisions that you and the other participant make will determine the amount earned by each of you. At the beginning of each period, you will choose a number or "claim" between 80 and 200 cents. Claims will be made by writing the claim on a decision sheet that is attached to these instructions. Your claim amount may be any amount between and including 80 and 200 cents. That is, we allow fractions of cents. The person who you are matched with will also make a claim between and including 80 and 200 cents. If the claims are equal, then you and the other person each receive the amount claimed. If the claims are not equal, then each of you receives the lower of the two claims. In addition, the person who makes the lower claim earns a reward of 50 cents, and the person with the higher claim pays a penalty of 50 cents. Thus you will earn an amount that equals the lower of the two claims, plus a 50 cent reward if you are the person making the lower claim, or minus a 50 cent penalty if you are the person making the higher claim. There is no penalty or reward if the two claims are exactly equal, in which case each person receives what they claimed.

Example: Suppose that your claim is X and the other's claim is Y .
 If $X = Y$, you get X , and the other gets Y .
 If $X > Y$, you get Y minus 50 cents, and the other gets Y plus 50 cents.
 If $X < Y$, you get X plus 50 cents, and the other gets X minus 50 cents.

Record of Results

Now, each of you should examine the record sheet for part A. This sheet is the last one attached to these instructions. Your identification number is written in the top-right part of this sheet. Now, please look at the columns of your record sheet for part A. Going from left to right, you will see columns for the "period," "your claim," "other's claim," "minimum claim," penalty or reward (if any), and "your earnings." You begin by writing down your own claim in the appropriate column. As mentioned above, this claim must be greater than or equal to 80 cents and less than or equal to 200 cents, and the claim may be any amount in this range, (i.e. fractions of cents are allowed). Use decimals to separate fractions of cents. For example, $wxy.z$ cents indicates wxy cents, and a fraction $z/10$ of a cent. Similarly, $xy.z$ cents indicates xy cents and a fraction $z/10$ of a cent.

After you make and record your decision for period one, we will collect all decision sheets. Then we will draw numbered ping pong balls to match each of you with another person. Here we have a container with ping pong balls, each ball has one of your identification numbers

on it. We will draw the ping pong balls to determine who is matched with whom. After we have matched someone with you, we will write the other's claim, the minimum claim, the penalty or reward, and your earnings in the relevant columns of your decision sheet and return it to you. Then, you make and record your decision for period two, we collect all decision sheets, draw ping pong balls to randomly match you with another person, write the other's claim, minimum claim, penalty or reward, and earnings in your decision sheet and return it to you. This same process is repeated a total number of ten times.

Summary

To begin, participants make and record their claims by writing the claim amount in the appropriate column of the decision sheet. Then the decision sheets are collected and participants are randomly matched using draws of numbered ping pong balls. Once the matching is done, the other's decision, the minimum claim, the penalty or reward, and the earnings are written on each person's decision sheet. Once all decision sheets are returned, participants make and record their claims for the next period. The decisions determine each person's earnings as described above (you will receive an amount that equals the minimum of your claim and the other person's claim, minus a 50 cent penalty if you have the higher claim, and plus a 50 cent reward if you have the lower claim. There is no penalty or reward if you have the same claim as the person with whom you are matched). Note that a new random matching is done in each period. After we finish all periods, we will read to you the instructions for part B.

Final Remarks

At the end of today's session, we will pay to you, privately in cash, the amount that you have earned. We will add together your earnings from all parts of this exercise to determine your total earnings (earnings will be rounded off to the nearest penny amount). You have already received the \$6 participation payment. Therefore, if you earn an amount X during the exercise that follows, you will receive a total amount of $\$6.00 + X$. Your earnings are your own business, and you do not have to discuss them with anyone.

During the experiment, you are not permitted to speak or communicate with the other participants. If you have a question while the experiment is going on, please raise your hand and one of us will come to your desk to answer it. At this time, do you have any questions about the instructions or procedures? If you have a question, please raise your hands and one of us will come to your seat to answer it.

Appendix B: Individual Decisions, with Other's Decision in Parentheses

Session 1: Part A with $R = 80$ Cents, Part B with $R = 10$ Cents

period	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
1 R=80	200 (80)	85 (140.9)	85 (150)	140 (120)	120 (140)	100 (80)	80 (200)	150 (85)	140.9 (85)	120 (140)	140 (120)	80 (100)
2	199.9 (199)	102.3 (80)	100 (90)	110 (85)	100 (120)	80 (80)	199 (199.9)	90 (100)	85 (110)	120 (100)	80 (80)	80 (102.3)
3	190 (110)	80 (80)	100 (199)	80 (100)	110 (190)	80 (90)	199 (100)	85 (80)	90 (80)	100 (80)	80 (80)	80 (85)
4	100 (80)	80 (80)	100 (80)	85 (80)	120 (80)	80 (80)	80 (100)	80 (100)	80 (100)	100 (80)	80 (120)	80 (85)
5	80 (120)	80 (80)	100 (80)	80 (80)	120 (80)	80 (80)	80 (80)	80 (80)	80 (100)	80 (80)	80 (80)	80 (80)
6	80 (80)	80 (80)	100 (80)	80 (80)	100 (80)	80 (100)	80 (100)	99 (80)	80 (80)	80 (99)	80 (80)	80 (80)
7	80 (80)	80 (80)	80 (99)	80 (80)	80 (80)	90 (80)	80 (80)	99 (80)	80 (90)	80 (80)	80 (80)	80 (80)
8	80 (99)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	99 (80)	80 (80)	80 (80)	80 (80)	80 (80)
9	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)
10	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)	80 (80)
1 R=10	200 (120)	95 (100)	185 (200)	160 (80)	120 (200)	100 (95)	200 (185)	80 (160)	190 (200)	200 (80)	80 (200)	200 (190)
2	200 (97)	97 (200)	195 (180)	170 (200)	140 (98)	98 (140)	190 (190)	100 (80)	190 (190)	80 (100)	200 (170)	180 (195)
3	200 (189)	105 (190)	185 (200)	200 (125)	125 (200)	200 (185)	189 (200)	190 (105)	190 (200)	80 (180)	200 (190)	180 (80)
4	195 (100)	150 (189)	185 (190)	160 (200)	199.9 (80)	190 (185)	189 (150)	100 (195)	190 (80)	80 (190)	200 (160)	80 (199.9)
5	199 (185)	175 (200)	185 (199)	190 (180)	199 (80)	200 (175)	195 (200)	190 (190)	190 (190)	80 (199)	200 (195)	180 (190)

Session 2: Part A with $R = 10$ Cents, Part B with $R = 80$ Cents

period	S1	S2	S3	S4	S5	S6	S7	S8	S9
1	150	150	199	186.5	190.1	190	191.3	189	150
R = 10	(199)	(-)	(150)	(189)	(190)	(190.1)	(150)	(186.5)	(191.3)
2	143	200	199	154.4	200	190	183.5	179.8	175
	(190)	(179.8)	(183.5)	(-)	(175)	(143)	(199)	(200)	(200)
3	175	190	199	141.5	190	190	191.3	175.4	165
	(141.5)	(165)	(175.4)	(175)	(-)	(191.3)	(190)	(199)	(190)
4	135	180	199	175.5	190	190	189.9	184.6	180
	(184.6)	(189.9)	(175.5)	(199)	(-)	(180)	(180)	(135)	(190)
5	169	180	199	190	190	190	191	176.7	180
	(190)	(191)	(-)	(180)	(169)	(176.7)	(180)	(190)	(190)
6	181	189	199	190.5	190	190	191	179.4	185
	(189)	(181)	(179.4)	(190)	(190.5)	(191)	(190)	(199)	(-)
7	160	180	200	165	190	190	189	189.6	185
	(190)	(200)	(180)	(190)	(160)	(165)	(-)	(185)	(189.6)
8	190	180	200	175	190	190	189	188.2	185
	(175)	(-)	(188.2)	(190)	(190)	(190)	(185)	(200)	(189)
9	153	180	200	180	190	190	180	189	185
	(-)	(189)	(190)	(180)	(200)	(185)	(180)	(180)	(190)
10	170	185	199	200	190	190	179	187	185
	(179)	(185)	(200)	(199)	(190)	(190)	(170)	(-)	(185)
1	120	89	120	80	109	170	104	99.8	150
R = 80	(99.8)	(-)	(150)	(109)	(80)	(104)	(170)	(120)	(120)
2	80	89	120	80	80	120	149	96.4	120
	(89)	(80)	(-)	(120)	(149)	(80)	(80)	(120)	(96.4)
3	80.5	80	120	99	80	90	101	108.9	80
	(99)	(101)	(80)	(80.5)	(120)	(-)	(80)	(80)	(108.9)
4	83	80	120	80	118	80	80	99.8	85
	(118)	(80)	(80)	(80)	(83)	(99.8)	(120)	(80)	(-)
5	85	80	120	80	80	80	80	99	90
	(80)	(99)	(90)	(-)	(80)	(80)	(85)	(80)	(120)

* A dash (-) indicates a subject who remained unmatched after all others had been randomly paired.

Session 5: Part A with $R = 25$ Cents, Part B with $R = 5$ Cents

period	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
1	85	200	150	200	190	198.9	100	95.5	150	130.2
R=.25	(95.5)	(150)	(200)	(100)	(130.2)	(150)	(200)	(85)	(98.9)	(190)
2	88.5	200	165	150	190	149.8	90	81.8	125	135.8
	(150)	(81.8)	(149.8)	(88.5)	(125)	(165)	(135.8)	(200)	(190)	(90)
3	130.5	199.9	155	200	190	149.8	175	98	175	125.8
	(175)	(155)	(199.9)	(149.8)	(98)	(200)	(125.8)	(190)	(130.5)	(175)
4	160	199.9	150	148	190	149.8	150	100	150	145
	(150)	(150)	(100)	(145)	(149.8)	(190)	(199.9)	(150)	(160)	(148)
5	140	199.9	145	144	190	164.8	85.5	105	150	140
	(140)	(144.7)	(150)	(199.9)	(105)	(85.5)	(164.8)	(190)	(145)	(140)
6	145.5	199.9	140	144.7	200	174.8	195	125	150	139.5
	(125)	(140)	(199.9)	(200)	(144.7)	(195)	(174.8)	(145.5)	(139.5)	(150)
7	140.3	199.9	145	194.7	144	174.8	105	150.2	125	139.9
	(194.7)	(144)	(174.8)	(140.3)	(199.9)	(145)	(125)	(139.9)	(105)	(150.2)
8	148.2	140	145	194.7	144	149.9	89.1	135.3	100	145
	(140)	(148.2)	(194.7)	(145)	(100)	(145)	(135.3)	(89.1)	(144)	(149.9)
9	139.9	140	145	144.7	144	144.9	95.2	110	110	147.2
	(95.2)	(144.7)	(144)	(140)	(145)	(147.2)	(139.9)	(110)	(110)	(144.9)
10	139.9	140	170	144.7	144	144.8	112	175	120	140
	(112)	(144.7)	(140)	(140)	(175)	(120)	(139.9)	(144)	(144.8)	(170)
1	140.6	140	175	200	199.9	199.8	150	100	180	175
R=.05	(140)	(140.6)	(199.9)	(100)	(175)	(150)	(199.8)	(200)	(175)	(180)
2	139.5	140	175	200	199.9	199.8	92	150	175	174.9
	(92)	(150)	(199.9)	(175)	(175)	(174.9)	(139.5)	(140)	(200)	(199.8)
3	139.5	140	180	200	199.9	199.8	80	153	180	183
	(199.8)	(183)	(180)	(80)	(153)	(139.5)	(200)	(199.9)	(180)	(140)
4	140.8	140	180	200	199.9	199.8	106.2	179	180	174.9
	(180)	(200)	(160.2)	(140)	(199.8)	(199.9)	(180)	(174.9)	(140.8)	(170)
5	160.2	140	165	200	199.7	199.8	97	175	175	174.9
	(200)	(199.7)	(97)	(160.2)	(140)	(175)	(165)	(199.8)	(174.9)	(175)
6	170.5	140	170	200	199.7	199.8	103.7	190	172	174.5
	(174.5)	(199.7)	(200)	(170)	(140)	(190)	(172)	(199.8)	(103.7)	(170.5)
7	170.9	145	175	200	199.7	199.8	200	195	120	173
	(173)	(200)	(120)	(175)	(195)	(200)	(199.8)	(199.7)	(175)	(107.9)
8	172.1	145	160	200	194.9	199.8	85	199.2	150	170
	(194.9)	(150)	(200)	(160)	(172.1)	(170)	(199.2)	(85)	(145)	(199.8)
9	173.6	145	170	200	194.9	199.8	99	195	140	180
	(194.9)	(180)	(195)	(199.8)	(173.6)	(200)	(140)	(170)	(99)	(145)
10	186.4	145	180	200	194.9	199.8	89	195	120	160
	(200)	(199.8)	(194.9)	(186.9)	(180)	(145)	(120)	(160)	(89)	(195)

Session 6: Part A with $R = 5$ Cents, Part B with $R = 25$ Cents

period	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
1	150.5	150	200	200	120	200	200	180.5	199.9	199.9
R=.05	(200)	(200)	(199.9)	(180.5)	(199.9)	(150)	(150.5)	(200)	(120)	(200)
2	195	200	185	190.1	130	200	200	200	100	199.9
	(190.1)	(130)	(100)	(195)	(200)	(200)	(199.9)	(200)	(185)	(200)
3	189.9	200	199	189.1	135	200	200	200	140	199.8
	(199)	(189.1)	(189.9)	(200)	(200)	(200)	(135)	(200)	(200)	(140)
4	194.5	200	186	193.1	140	200	200	200	200	199.8
	(193.1)	(140)	(200)	(194.5)	(200)	(199.8)	(186)	(200)	(200)	(200)
5	198.9	200	197	194.1	160	200	200	200	200	199.8
	(200)	(160)	(200)	(199.8)	(200)	(200)	(200)	(197)	(198.9)	(194.1)
6	198.9	199	188	195.1	190	200	200	200	199	196.2
	(196.2)	(200)	(195.1)	(188)	(200)	(199)	(199)	(190)	(200)	(198.9)
7	198.9	199.9	195	192	190	200	200	195	198	198.8
	(199.9)	(199.9)	(198.8)	(200)	(198)	(195)	(192)	(200)	(190)	(195)
8	198.9	200	190	193	197	200	200	195	198	194.9
	(194.9)	(200)	(197)	(198)	(190)	(195)	(200)	(200)	(193)	(198.9)
9	198.9	200	193	193	185	200	200	199	192	193.9
	(200)	(185)	(200)	(192)	(200)	(193)	(198.9)	(193.9)	(193)	(199)
10	198.9	200	192	194	170	200	200	200	192	196.5
	(200)	(194)	(196.5)	(200)	(192)	(200)	(200)	(198.9)	(170)	(192)
1	189.9	200	200	80	120	199	176	199.9	177	185.9
R=.25	(200)	(189.9)	(80)	(200)	(185.9)	(177)	(199.9)	(176)	(199)	(120)
2	189.9	200	190	80	130	185	176	175	178	185
	(130)	(185)	(80)	(190)	(189.9)	(200)	(175)	(176)	(185)	(178)
3	189.9	200	191	120	150	185	175	175	181	170
	(170)	(120)	(175)	(200)	(181)	(175)	(185)	(191)	(150)	(189.9)
4	174.9	180	175	150	160	185	175	175	180	175
	(175)	(175)	(174.9)	(160)	(150)	(180)	(180)	(175)	(185)	(175)
5	174.9	175	175	160	150	185	175	175	180	175
	(175)	(180)	(174.9)	(150)	(160)	(175)	(185)	(175)	(175)	(175)
6	174.9	175	175	145	150	180	175	174.9	175	173.9
	(175)	(145)	(175)	(175)	(174.9)	(173.9)	(174.9)	(150)	(175)	(180)
7	174.9	180	175	150	150	175	175	175	175	174.9
	(174.9)	(150)	(175)	(180)	(175)	(175)	(175)	(175)	(150)	(174.9)
8	174.8	175	175	160	150	175	174.8	175	175	174.8
	(174.8)	(150)	(160)	(175)	(175)	(175)	(174.8)	(175)	(174.8)	(175)
9	174.5	175	173	165	155	175	174.5	174.9	175	173.9
	(175)	(174.5)	(155)	(174.9)	(173)	(175)	(173.9)	(165)	(175)	(174.5)
10	174.4	150.6	175	170	155	175	170	175	174.8	172.8
	(175)	(175)	(150.6)	(175)	(174.8)	(174.4)	(172.8)	(170)	(155)	(170)