Online Appendix for:

Teams and Individuals in Standard Auction Formats: Decisions and Emotions

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Appendix A Regression tables

A.1 First-Price Auction

Table 2: Profits in FPA

	(1)	(2)	(3)	(4)	(5)	(6)
Individual	-2.048**	-2.061**	-3.500**	-2.937**	-2.625*	-10.58***
	(0.875)	(0.873)	(1.513)	(1.303)	(1.355)	(3.026)
Risk		0.0153	0.0153	0.0255*	0.0174	-0.00417
		(0.0111)	(0.0111)	(0.0150)	(0.0121)	(0.0167)
Period			-0.0717	-0.0717	-0.0717	-0.0717
			(0.0467)	(0.0468)	(0.0468)	(0.0469)
Individual*Period			0.221**	0.221**	0.221**	0.221**
			(0.111)	(0.111)	(0.111)	(0.111)
SPA error				-0.171***	-0.163***	-0.177***
				(0.0580)	(0.0543)	(0.0523)
Cognitive				0.270	0.258	-0.432***
				(0.432)	(0.270)	(0.142)
Experience					0.353	0.531
					(0.595)	(0.594)
Female					-2.610***	-2.190***
					(0.788)	(0.843)
Individual*Risk						0.0518**
						(0.0239)
Individual*Cognitive						0.819***
						(0.308)
Constant	3.953***	3.081***	3.547***	2.110	2.680	7.383**
	(0.197)	(0.639)	(0.686)	(2.547)	(3.632)	(3.053)
Observations	792	792	792	792	792	792
R^2	0.0152	0.0186	0.0211	0.0892	0.104	0.117

GLS random effects regression. Robust standard errors in parentheses (clustered on matching group level). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Bids in FPA

	(1)	(2)	(3)	(4)	(5)	(6)
Individual	2.663*	2.719**	7.434**	9.507**	27.10***	25.22***
	(1.573)	(1.382)	(3.283)	(4.618)	(6.550)	(6.510)
Value	0.824***	0.824***	0.825***	0.827***	0.827***	0.827***
	(0.0137)	(0.0135)	(0.0135)	(0.0122)	(0.0119)	(0.0118)
Individual*Value		-0.00117	-0.000989	-0.00420	-0.00743	-0.00551
		(0.0260)	(0.0258)	(0.0255)	(0.0257)	(0.0257)
Risk			-0.00593	-0.00604	-0.0105	-0.00492
			(0.00849)	(0.00839)	(0.0112)	(0.0113)
Individual*Risk			-0.0814**	-0.0813**	-0.0906*	-0.119**
			(0.0385)	(0.0386)	(0.0470)	(0.0505)
Period				0.404***	0.403***	0.403***
				(0.125)	(0.125)	(0.125)
Individual*Period				-0.296	-0.295	-0.296
				(0.337)	(0.336)	(0.337)
SPA error					0.156***	0.165***
					(0.0420)	(0.0490)
Cognitive					0.811***	0.620*
					(0.256)	(0.368)
Individual*Cognitive					-2.934***	-2.459***
					(0.715)	(0.591)
Female						0.344
						(1.740)
Experience						-2.582***
						(0.670)
Constant	-1.020	-1.051**	-0.717	-3.464***	-8.926***	0.939
	(0.705)	(0.418)	(0.674)	(1.010)	(1.405)	(3.514)
Observations	792	792	792	792	792	792
R^2	0.836	0.836	0.842	0.843	0.859	0.864

GLS random effects regression. Robust standard errors in parentheses (clustered on matching group level). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Prices in FPA

	(1)	(2)	(3)	(4)	(5)	(6)
Individual	3.581*	2.463	10.60	9.662	43.41***	42.90***
	(1.913)	(3.047)	(7.419)	(8.840)	(9.177)	(8.068)
Max-value	0.798***	0.831***	0.832***	0.833***	0.829***	0.831***
	(0.0299)	(0.0367)	(0.0379)	(0.0395)	(0.0345)	(0.0380)
Second-value	0.0575	-0.00541	-0.00425	-0.00260	0.000382	0.00130
	(0.0352)	(0.0252)	(0.0235)	(0.0230)	(0.0204)	(0.0248)
Individual*Max-value		-0.0629	-0.0792	-0.0876	-0.101	-0.0899
		(0.0543)	(0.0604)	(0.0670)	(0.0687)	(0.0622)
Individual*Second-value		0.118**	0.119**	0.117**	0.117**	0.113**
		(0.0596)	(0.0593)	(0.0567)	(0.0480)	(0.0526)
Risk			-0.00126	-0.00137	-0.00283	0.0446
			(0.0143)	(0.0145)	(0.0303)	(0.0309)
Individual*Risk			-0.121	-0.121	-0.105	-0.144**
			(0.0829)	(0.0837)	(0.0861)	(0.0664)
Period				0.176	0.176	0.177
				(0.167)	(0.166)	(0.165)
Individual*Period				0.262	0.269	0.263
				(0.513)	(0.511)	(0.510)
SPA error					0.237**	0.168***
					(0.0962)	(0.0622)
Cognitive					1.956***	1.602**
					(0.710)	(0.731)
Individual*Cognitive					-5.799***	-5.702***
					(2.028)	(1.587)
Female						8.606***
						(3.235)
Experience						-3.753***
						(1.276)
Constant	-0.826	-0.199	-0.254	-1.568	-14.53**	-5.878
	(1.716)	(1.998)	(2.306)	(2.620)	(5.879)	(9.412)
Observations	264	264	264	264	264	264
R^2	0.708	0.712	0.720	0.724	0.744	0.758

GLS random effects regression, data collapsed on market level. Robust standard errors in parentheses (clustered on matching group level). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A.2 English Auction

Table 5: Profits in EA

	(1)	(2)	(3)	(4)	(5)	(6)
Individual	-0.672	-0.584	-3.797	-3.590	-3.651	-8.673
	(1.243)	(1.344)	(2.459)	(2.662)	(2.798)	(11.58)
Risk		0.0100	0.0100	0.00351	0.00602	0.000767
		(0.0152)	(0.0152)	(0.0130)	(0.0207)	(0.0173)
Period			-0.304	-0.304	-0.304	-0.304
			(0.248)	(0.248)	(0.249)	(0.249)
Individual*Period			0.714*	0.714*	0.714*	0.714*
			(0.381)	(0.382)	(0.382)	(0.383)
SPA error				-0.0532***	-0.0552**	-0.0610**
				(0.0142)	(0.0221)	(0.0298)
Cognitive				1.027	1.036	0.595
				(0.728)	(0.709)	(1.247)
Experience					-0.128	0.0837
					(1.262)	(1.326)
Female					0.670	1.166
					(2.302)	(2.739)
Individual*Risk						0.0129
						(0.0350)
Individual*Cognitive						0.687
						(1.580)
Constant	6.904***	6.218***	7.587***	2.059	1.991	4.134
	(0.656)	(1.407)	(2.189)	(5.432)	(8.045)	(9.200)
Observations	528	528	528	528	528	528
R^2	0.000511	0.000977	0.00419	0.0148	0.0152	0.0159

GLS random effects regression. Robust standard errors in parentheses (clustered on matching group level). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Prices in EA

	(1)	(2)	(3)	(4)	(5)	(6)
Individual	1.734	-11.16	-35.78***	-22.42**	-1.518	-10.50
	(4.030)	(7.114)	(9.595)	(11.29)	(15.27)	(17.37)
Max-value	0.221***	0.0291	0.0286	0.0523*	0.0459	0.0473
	(0.0812)	(0.0429)	(0.0506)	(0.0278)	(0.0396)	(0.0359)
Second-value	0.520***	0.662***	0.662***	0.643***	0.659***	0.651***
	(0.0949)	(0.0963)	(0.109)	(0.123)	(0.112)	(0.119)
Individual*Max-value		0.364***	0.337***	0.314***	0.312***	0.306***
		(0.102)	(0.105)	(0.0827)	(0.0886)	(0.0905)
Individual*Second-value		-0.267*	-0.226	-0.215	-0.234	-0.236
		(0.146)	(0.144)	(0.153)	(0.144)	(0.154)
Risk			-0.166***	-0.166***	-0.219***	-0.215***
			(0.0565)	(0.0586)	(0.0654)	(0.0751)
Individual*Risk			0.385***	0.383***	0.466***	0.514***
			(0.0820)	(0.0827)	(0.102)	(0.108)
Period				1.838*	1.833	1.834
				(1.105)	(1.117)	(1.120)
Individual*Period				-2.680**	-2.680**	-2.691**
				(1.251)	(1.259)	(1.262)
SPA error					-0.184	-0.206
					(0.154)	(0.133)
Cognitive					3.077*	2.802*
					(1.656)	(1.613)
Individual*Cognitive					-4.047**	-3.076
					(2.062)	(2.595)
Female						8.289
						(7.646)
Experience						-0.723
						(3.709)
Constant	5.686	12.49***	23.94***	14.84*	0.446	1.058
	(4.526)	(4.304)	(7.322)	(8.594)	(13.08)	(20.48)
Observations	176	176	176	176	176	176
R^2	0.429	0.447	0.468	0.488	0.502	0.509

GLS random effects regression, data collapsed on market level. Robust standard errors in parentheses (clustered on matching group level). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A.3 Emotions

Table 7: Emotions associated with winning an auction

	Dependent variable			
	Neutrality	Happiness	Sadness	Anger
Individual	-0.0351	-0.0272	0.0144**	0.00985
	(0.0271)	(0.0176)	(0.00709)	(0.0125)
Winner	-0.00843	0.0112**	-0.00479	-0.00317
	(0.00609)	(0.00468)	(0.00605)	(0.00408)
Individual*Winner	-0.00805	-0.00656	-0.000756	-0.0120**
	(0.0242)	(0.0107)	(0.0112)	(0.00554)
Constant	0.650***	0.105***	0.0795***	0.0600***
	(0.0119)	(0.00678)	(0.00300)	(0.00863)
Observations	1500	1500	1500	1500
R^2	0.00519	0.00765	0.00508	0.00102

	Dependent variable			
	Surprise	Fear	Disgust	Valence
Individual	0.00633	-0.000877	0.00546	-0.0471**
	(0.00543)	(0.000807)	(0.00511)	(0.0215)
Winner	-0.00415*	0.000377	0.000776	0.0177***
	(0.00248)	(0.00135)	(0.00252)	(0.00475)
Individual*Winner	0.00505	-0.000942	0.00661	0.000616
	(0.00523)	(0.00137)	(0.00492)	(0.0175)
Constant	0.0213***	0.00170**	0.00755**	-0.0225**
	(0.00417)	(0.000762)	(0.00300)	(0.0109)
Observations	1500	1500	1500	1500
R^2	0.00485	0.00123	0.0111	0.0103

GLS random effects regression. Robust standard errors in parentheses (clustered on matching group level).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: The effect of emotions on future bids

	(1)	(2)	(3)	(4)	(5)
Individual	2.715**	7.428**	10.52*	10.76*	10.51*
	(1.375)	(3.277)	(5.964)	(5.704)	(5.906)
Value	0.825***	0.825***	0.834***	0.836***	0.835***
	(0.0134)	(0.0134)	(0.0127)	(0.0128)	(0.0133)
Individual*Value	-0.00108	-0.000865	-0.00186	-0.00505	-0.00270
	(0.0260)	(0.0258)	(0.0217)	(0.0219)	(0.0231)
Risk		-0.00593	-0.00647	-0.00253	-0.00449
		(0.00847)	(0.00719)	(0.00994)	(0.0101)
Individual*Risk		-0.0814**	-0.0848**	-0.0985**	-0.0997**
		(0.0385)	(0.0398)	(0.0467)	(0.0478)
Period			0.150	0.151	0.154
			(0.132)	(0.132)	(0.134)
Individual*Period			-0.406	-0.406	-0.378
			(0.438)	(0.438)	(0.446)
Winner_{-1}			-0.865***	-0.919***	-0.209
			(0.311)	(0.310)	(0.531)
SPA error				0.104	0.105
				(0.0683)	(0.0660)
Cognitive				-1.167	-1.173
				(0.726)	(0.736)
Sadness_{-1}					-1.892
					(1.523)
Winner_{-1}*Sadness_{-1}					-8.442*
					(4.550)
Neutrality_{-1}					0.524
					(1.102)
Happiness_{-1}					1.299
					(2.130)
Anger_{-1}					2.082
					(2.223)
Surprise_{-1}					10.73
					(10.62)
Fear_{-1}					18.82***
					(7.113)
Disgust_{-1}					-2.643
					(3.707)
Constant	-1.055**	-0.722	-1.289*	5.154	4.654
	(0.416)	(0.673)	(0.774)	(4.336)	(4.043)
Observations	1512	1512	1386	1386	1375
R^2	0.886	0.889	0.906	0.911	0.911

GLS random effects regression. Robust standard errors in parentheses (clustered on matching group level). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Appendix B Instructions

Below we provide the instructions in *TEAM FPA* treatment (translated from German). Instructions of the other treatments are available in the online appendix.

Welcome to the experiment and thank you for your participation!

From now on, please do not talk to other participants of the experiment.

General Information

This experiment analyzes economic decision-making. You can earn money in the experiment. The earnings will be paid to you privately in cash after the experiment ends.

The whole experiment takes approximately two hours and consists of 4 parts. At the beginning of each part, you will receive detailed instructions. The parts are independent of each other; decisions made in one part will not affect your earnings in another part. The sum of your earnings from the 4 parts will constitute your total payoff from the experiment. You will be informed about your total payoff after completion of the fourth part, and it will be paid out to you in cash at the end of the experiment.

If you have any questions after the instructions or during the experiment, please raise your hand. One of the experimenters will come to you and answer your questions in private. For the sake of linguistic simplicity, we only use masculine terms.

During the experiment, you and the other participants will be asked to make decisions. Sometimes you will interact with other participants. This means that your own decisions as well as the decisions of other participants can affect your total payoff. This will be determined according to the rules explained below.

A clock will run down in the top right corner of the screen while you make your decisions. This informs you of how much time you still have to make your decision. Sometimes this time restriction is binding and sometimes it is not. The details are explained below. The information screens, on which you do not need to make any decisions, will disappear when the clock runs out.

Payments

In parts 1-3 of the experiment, the payoffs are expressed in points, not Euros. The points will be converted into Euros at the end of the experiment. At the beginning of each part you will be

informed of the exchange rate for the conversion. In part 4, the payoffs are expressed in Euros. For having shown up on time, you will receive €4 in addition to the money that you can earn during the experiment.

Anonymity

We only evaluate aggregated data from the experiment and never link names to the data from the experiment. At the end of the experiment, you will be asked to sign a receipt regarding your earnings, which serves only for accounting purposes and cannot be linked to your behavior in the experiment. This experiment will be videotaped. The video records serve the research purpose of the experiment. Just act natural.

Tools

You will find a pen on your table. Please leave it there when the experiment ends.

Groups

In the experiment, you will be a member of one out of six groups. Each group consists of three members. The allocation to the groups is random. The groups remain unchanged throughout the experiment.

Part 1

Exchange Rate

The exchange rate in part 1 is: **3 Points = 1 Euro**

Auctions

Part 1 consists of twelve independent auctions. In each auction, you bid in your group for a good, which has a certain value for you and your group. For each auction, three groups are randomly matched to bid for a good. We will call this a market (consisting of three groups with three members each).

Each group member receives a one-time initial endowment of 10 points.

Value of the Good

Each group receives information about the value of the good at the beginning of each auction. This value is determined independently for each group on a market; it means it is very likely that it will be different for different groups in the same auction. The value for each group is drawn randomly between 0 and 100 points. Every value between 0 and 100 is equally likely (where 0 and 100 are also possible). Each bidder group knows its own value for the good but not the values of the other two groups on the market.

Decision Making

In this part, each group will place a bid. Each group decides on a bid simultaneously. The decision within the group is made in two stages:

In the first stage, you will be asked individually for a suggestion for the group bid. You have 30 seconds to enter a suggestion in the middle of the screen and click on the "Next" button. After all group members in your group have entered their suggestions, the second stage starts.

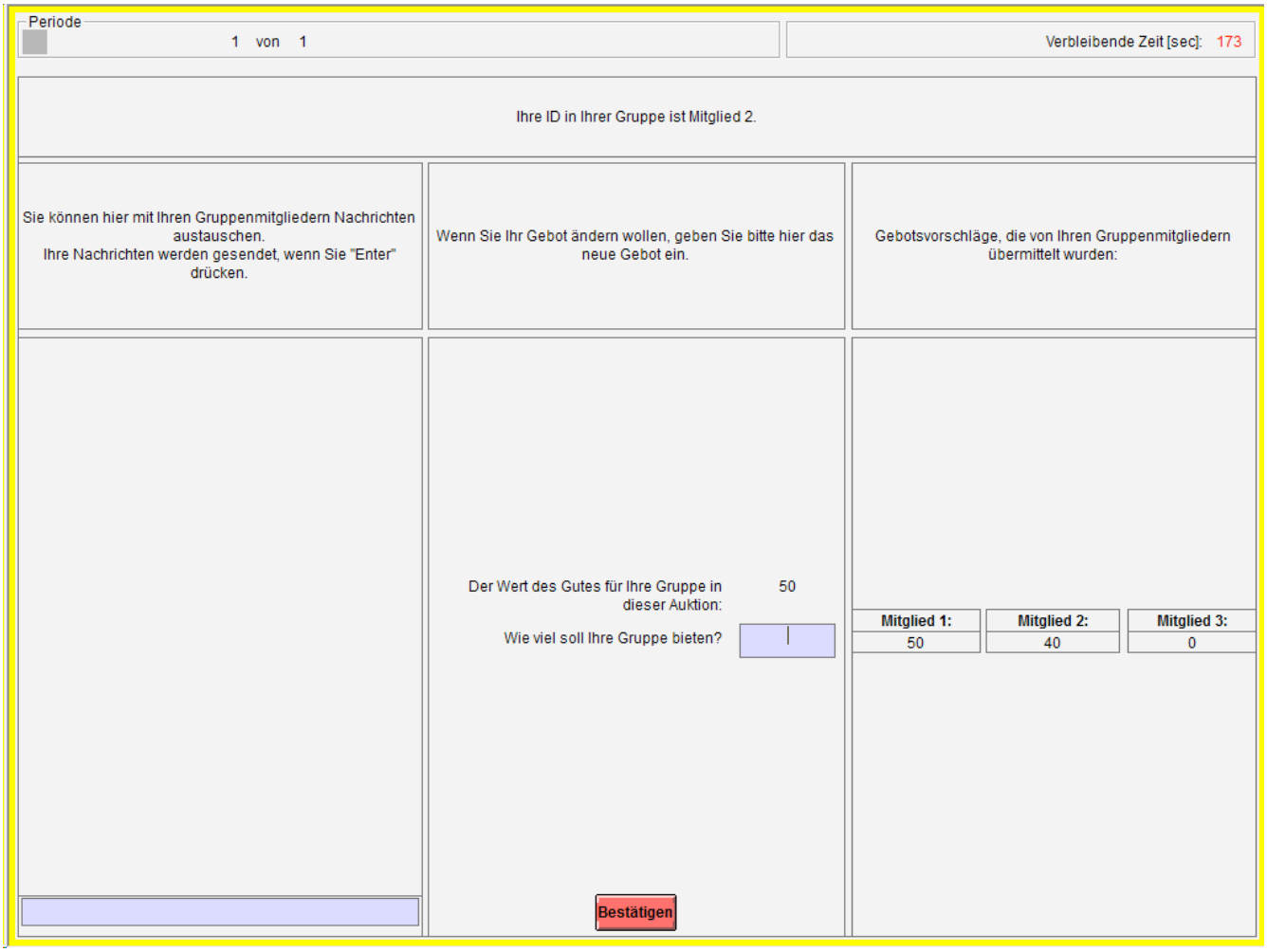
In the second stage, the group has 180 seconds to agree on a common decision. A decision is considered valid only if exactly the same decision is entered by all three group members (you can see the decisions of your group members in the right part of your screen). Within the 180 seconds, all group members can modify their decisions as often as they want. You can also discuss your decisions with the other group members – this discussion takes place in a chat window in the left part of the screen.

The following rules apply for the chat: (i) conversation in German; (ii) no insults, threats or similar violations of etiquette; (iii) no information that would allow to identify you (e.g. seat number, name, gender, field of study etc.). If you break these rules, you will be excluded from the experiment.

The chat should help you to coordinate within the group. If a group fails to reach a common decision within 180 seconds, a bid of 0 will be assumed.

Bids must always be integer numbers. The highest possible bid is 110 points.

All information can also be found on the screen, which will look like this:



In the upper area of the screen, you can see your identification number (ID) in your group (e.g. "Your ID in your group is member 2"). Your ID will be retained for the entire experiment.

On the left side of the screen, you will see a chat window where you can exchange messages with the other members of the group. To do so, enter your message in the purple field at the bottom left and then press the enter key (Return/Enter). Your entry will be transmitted to the computer and appear in the grey area of the window. The other participants in your group will see your message and you will also see the messages of the other group members above the purple input field. Important: If you want to send a message, press the enter key (Return/Enter) so that the text you have written will appear in the grey area.

On the right side of the screen, you will see your group members' suggestions for the bid. If you choose to change your bid, you can do it in the center of the screen. Your bid will be changed

when you enter a new bid in the input field in the middle and click on "Confirm" button. Then your new bid will replace your previous bid on the right side of the screen.

Payoffs

The group with the highest bid among the three groups wins the auction. This group pays their bid as the price for the good. Hence, each member in this group earns the following amount in this auction:

Payoff for each group member = Value of the good – Bid of the group

For example: The three group bids are 80, 60, 40. The group which has bid 80 wins the auction. Each member of the winning group receives the value of the good and pays 80 points.

If all three groups bid 0, the good will not be sold. If two or three groups have submitted the same highest bid (greater than 0), it is determined randomly which group wins the auction and pays for the good.

If a group does not receive the good in an auction, it does not earn anything in this auction.

However, each group member retains the initial endowment of 10 points (with one exception: see below).

Feedback and Further Auctions

Once an auction ends, a new auction starts with exactly the same rules. There are in total 12 auctions in this part of the experiment. In each auction, the six bidder groups in the room are randomly re-matched to form two markets. The three members of a group remain unchanged.

At the end of the experiment, one auction is randomly drawn as relevant for your payoff. Your payoff from Part 1 is based on the points you have earned in this auction (it means: the value minus the bid if your group won the auction; or zero if your group did not win the auction) plus the initial endowment of 10 points.

Attention!

You can also lose money in an auction. If your group wins an auction with a bid that is above the value of the good, you are going to make losses! Losses are deducted from your initial endowment (and if it is not enough: from your earnings from the other parts of the experiment).

If you have any questions, please raise your hand. An experimenter will come to you and answer your questions.

Part 2

Exchange Rate

The exchange rate in part 2 is: **3 Points = 1 Euro**

Auctions

Part 2 contains only one auction. In this auction, you bid in your group for a good, which has a certain value for you and your group. Three groups are randomly matched again for the auction and form a market to bid for a good.

Each group member receives a one-time initial endowment of 10 points.

Value of the Good

Each group receives information about the value of the good at the beginning of the auction. This value is determined independently for each group on a market; it means it is very likely that it will be different for different groups. The value for each group is drawn randomly between 0 and 100 points. Every value between 0 and 100 is equally likely (where 0 and 100 are also possible). Each bidder group knows its own value for the good but not the values of the other two groups on the market.

Decision Making

In this part, each group will place a bid. Each group decides on a bid simultaneously; there is no repetition. The decision within the group is made in two stages:

In the first stage, you will be asked individually for a suggestion for the group bid. You have

30 seconds to enter a suggestion in the middle of the screen and click on the "Next" button. After all group members in your group have entered their suggestions, the second stage starts.

In the second stage, the group has 180 seconds to agree on a common decision. A decision is considered valid only if exactly the same decision is entered by all three group members (you can see the decisions of your group members in the right part of your screen). Within the 180 seconds, all group members can modify their decisions as often as they want. You can also discuss your decisions with the other group members – this discussion takes place in a chat window in the left part of the screen.

The following rules apply for the chat: (i) conversation in German; (ii) no insults, threats or similar violations of etiquette; (iii) no information that would allow to identify you (e.g. seat number, name, gender, field of study etc.). If you break these rules, you will be excluded from the experiment.

The chat should help you to coordinate within the group. If a group fails to reach a common decision within 180 seconds, a bid of 0 will be assumed.

Bids must always be integer numbers. The highest possible bid is 110 points.

End of the Auction

The group with the highest bid among the three groups wins the auction. The group pays the second highest bid as the price for the good. Hence, each member in this group earns the following amount in the auction:

Payoff for each group member = Value of the good – The second highest bid on the market

Example: The three group bids are 80, 60, 40; the group which has bid 80 wins the auction. Each member of the winning group receives the value of the good and pays 60 points.

If all three groups bid 0, the good will not be sold. If two or three groups have submitted the same highest bid (greater than 0), it is determined randomly, which group wins the auction and

pays for the good.

If a group does not receive the good in an auction, it does not earn anything in this auction.

However, each group member retains the initial endowment of 10 points (with one exception: see below).

Attention!

You can also lose money in this auction. If your group pays a price above the value of the good (=when the second highest bid is higher than the value of the good and you win the auction), you are going to make losses! Losses are deducted from your initial endowment (and if it is not enough: from your earnings from the other parts of the experiment).

There is only one auction in Part 2.

Summary

Only two things change in comparison to Part 1:

- There is only one auction.
- The winner of the auction pays the second highest bid on the market for the good.

If you have any questions, please raise your hand. An experimenter will come to you and answer your questions.

Part 3

Exchange Rate

The exchange rate in part 3 is: **40 Points = 1 Euro**

Each group member receives 100 points. Your group can invest any amount between 0 and 100 points (0 and 100 are also possible) in a risky asset and keep the rest. We denote the amount of points that your group invests in the risky asset as R. With a probability of 50%, the amount R is multiplied by 2.5; with a probability of 50%, the amount R is lost. Each group member receives

from their investment either $2.5 \times R$ or nothing with the same probability. Each group member keeps the amount $100 - R$ that was not invested.

Decision Making

The decision within the group is again made in two stages, with the group being the same as in parts 1 and 2.

In the first stage, you will be asked individually for a suggestion for the amount R to be invested. You have 30 seconds to enter a suggestion in the middle of the screen and click the "Next" button. If you do not make a suggestion before the time is up, you will be automatically taken to the second stage without a suggestion.

In the second stage, the group has 120 seconds to agree on a decision on the amount R to be invested. A decision is considered valid only if exactly the same decision is entered by all three group members (you can see the decisions of your group members in the right part of your screen). Within the 180 seconds, all group members can modify their decisions as often as they want. You can also discuss your decisions with the other group members – this discussion takes place in a chat window in the left part of the screen.

The following rules apply for the chat: (i) conversation in German; (ii) no insults, threats or similar violations of etiquette; (iii) no information that would allow to identify you (e.g. seat number, name, gender, field of study etc.). If you break these rules, you will be excluded from the experiment.

The chat should help you to coordinate within the group. If your group fails to reach a common decision in 120 seconds, you will not earn any money in part 3.

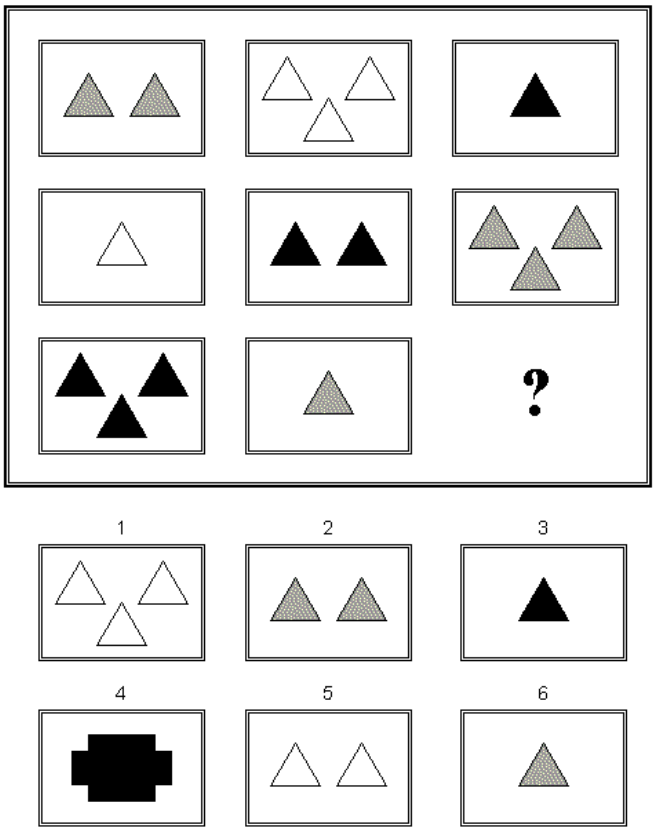
After a valid decision, the computer will simulate the investment and you will find out how much you have earned.

Part 4

In this part, we ask your group to solve 8 problems. All of them have the same structure.

You see a box with a matrix, i.e. a rectangular pattern of different symbols. Each matrix has 3 rows and 3 columns. The symbol in the lower right corner is missing. Below the matrix, there

are 6 symbols to choose from. Only one of them fits into the pattern and should replace the empty field. Here is an example.



The correct solution is "Number 5". The task for your group is to identify the correct symbol. Once you are done with one problem, the next problem will appear on the screen. You cannot go back to the previous answers once you have submitted a solution. For each correct solution, each group member receives 50 Cents. If the answer is wrong, you will not get anything.

The decision within the group is again made in two stages:

In the first stage you will be asked individually for a suggestion for the correct symbol. You have 30 seconds to enter a suggestion in the middle of the screen and click the "Next" Button. If you do not make a suggestion before the time is up, you will be automatically taken to the second stage without a suggestion.

In the second stage, the group has 60 seconds to agree on the correct symbol. A decision is considered valid only if exactly the same decision is entered by all three group members (you can see the decisions of your group members in the right part of your screen). Within the 60 seconds, all group members can modify their decisions as often as they want. You can also discuss your

decisions with the other group members – this discussion takes place in a chat window in the left part of the screen.

The following rules apply for the chat: (i) conversation in German; (ii) no insults, threats or similar violations of etiquette; (iii) no information that would allow to identify you (e.g. seat number, name, gender, field of study etc.). If you break these rules, you will be excluded from the experiment.

The chat should help you to coordinate within the group. If your group fails to reach a common decision in 60 seconds, you will not earn any money for the respective problem.

At the end of part 4, you will learn how many problems your group has solved correctly.

Before we pay out your earnings to you in cash, we ask you to fill out a short questionnaire. Then the experiment ends.

Appendix C Online Appendix

C.1 Additional Tables First-Price Auction

Table 9: Profits relative to value in FPA

	(1)	(2)	(3)	(4)	(5)	(6)
Individual	-0.0341**	-0.0343**	-0.0562**	-0.0465**	-0.0424*	-0.167***
	(0.0139)	(0.0139)	(0.0255)	(0.0213)	(0.0220)	(0.0523)
Risk		0.000233	0.000233	0.000405*	0.000278	0.00000926
		(0.000168)	(0.000168)	(0.000216)	(0.000170)	(0.000227)
Period			-0.000971	-0.000971	-0.000971	-0.000971
			(0.000716)	(0.000717)	(0.000718)	(0.000719)
Individual*Period			0.00337*	0.00337*	0.00337*	0.00337*
			(0.00195)	(0.00195)	(0.00195)	(0.00196)
SPA error				-0.00291***	-0.00277***	-0.00297***
				(0.000889)	(0.000828)	(0.000792)
Cognitive				0.00507	0.00507	-0.00685**
				(0.00641)	(0.00427)	(0.00284)
Experience					0.00273	0.00475
					(0.00887)	(0.00858)
Female					-0.0381***	-0.0325***
					(0.0114)	(0.0125)
Individual*Risk						0.000659**
						(0.000325)
Individual*Cognitive						0.0143**
						(0.00555)
Constant	0.0564***	0.0431***	0.0494***	0.0221	0.0384	0.118**
	(0.00312)	(0.0102)	(0.0101)	(0.0377)	(0.0526)	(0.0489)
Observations	792	792	792	792	792	792
R^2	0.0180	0.0214	0.0240	0.109	0.122	0.132

GLS random effects regression. Robust standard errors in parentheses (clustered on matching group level). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 10: Bid shading in FPA

	(1)	(2)	(3)	(4)	(5)	(6)
Individual	-2.663*	-2.719**	-7.434**	-9.507**	-27.10***	-25.22***
	(1.573)	(1.382)	(3.283)	(4.618)	(6.550)	(6.510)
Value	0.176***	0.176***	0.175***	0.173***	0.173***	0.173***
	(0.0137)	(0.0135)	(0.0135)	(0.0122)	(0.0119)	(0.0118)
Individual*Value		0.00117	0.000989	0.00420	0.00743	0.00551
		(0.0260)	(0.0258)	(0.0255)	(0.0257)	(0.0257)
Risk			0.00593	0.00604	0.0105	0.00492
			(0.00849)	(0.00839)	(0.0112)	(0.0113)
Individual*Risk			0.0814**	0.0813**	0.0906*	0.119**
			(0.0385)	(0.0386)	(0.0470)	(0.0505)
Period				-0.404***	-0.403***	-0.403***
				(0.125)	(0.125)	(0.125)
Individual*Period				0.296	0.295	0.296
				(0.337)	(0.336)	(0.337)
SPA error					-0.156***	-0.165***
					(0.0420)	(0.0490)
Cognitive					-0.811***	-0.620*
					(0.256)	(0.368)
Individual*Cognitive					2.934***	2.459***
					(0.715)	(0.591)
Female						-0.344
						(1.740)
Experience						2.582***
						(0.670)
Constant	1.020	1.051**	0.717	3.464***	8.926***	-0.939
	(0.705)	(0.418)	(0.674)	(1.010)	(1.405)	(3.514)
Observations	792	792	792	792	792	792
R^2	0.189	0.189	0.216	0.222	0.301	0.327

GLS random effects regression. Robust standard errors in parentheses (clustered on matching group level). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

C.2 Additional Tables English Auction

Table 11: Bids in EA

	(1)	(2)	(3)	(4)	(5)	(6)
Individual	1.042	-5.059	-10.04	-1.607	8.587	12.37
	(3.498)	(6.607)	(8.394)	(8.824)	(7.150)	(9.749)
Max-value	0.0445	-0.0395	-0.0395	-0.0239	-0.0361	-0.0343
	(0.0561)	(0.0477)	(0.0494)	(0.0378)	(0.0250)	(0.0248)
Second-value	0.561***	0.618***	0.617***	0.605***	0.620***	0.622***
	(0.0765)	(0.0947)	(0.0982)	(0.108)	(0.101)	(0.102)
Individual*Max-value		0.159	0.156	0.141	0.148*	0.148*
		(0.0967)	(0.0986)	(0.0869)	(0.0815)	(0.0823)
Individual*Second-value		-0.108	-0.101	-0.0941	-0.106	-0.110
		(0.139)	(0.142)	(0.148)	(0.143)	(0.142)
Risk			-0.0380	-0.0380	-0.0575	-0.0576
			(0.0369)	(0.0374)	(0.0412)	(0.0412)
Individual*Risk			0.0759	0.0757	0.0957	0.0777
			(0.0628)	(0.0631)	(0.0629)	(0.0635)
Period				1.260*	1.253*	1.253*
				(0.713)	(0.719)	(0.723)
Individual*Period				-1.709*	-1.702*	-1.702*
				(0.907)	(0.911)	(0.916)
SPA error					-0.108	-0.0884
					(0.0739)	(0.0657)
Cognitive					2.081***	2.399***
					(0.685)	(0.857)
Individual*Cognitive					-1.815*	-2.297*
					(0.982)	(1.219)
Female						-1.041
						(3.449)
Experience						-2.216
						(1.965)
Constant	0.532	3.789	6.426	0.218	-10.36*	-4.227
	(4.447)	(3.163)	(5.589)	(5.558)	(5.656)	(8.559)
Observations	528	528	528	528	528	528
R^2	0.228	0.230	0.232	0.238	0.247	0.249

GLS random effects regression. Robust standard errors in parentheses (clustered on matching group level). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

C.3 Team Decision Making

In the first-price auctions teams discussed on average for 133.7 seconds until they came to an agreement. (The median was 153 seconds and many teams utilized the full time allotment of 180 seconds.) Figure 1 below depicts the spread between the lowest and highest initial bid proposal within a team in first-price auctions. The average size of this spread is 9.49.

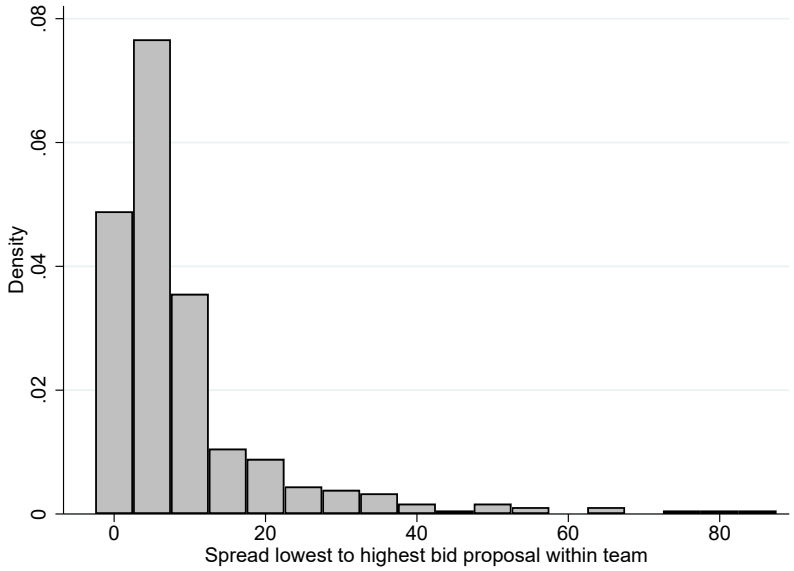
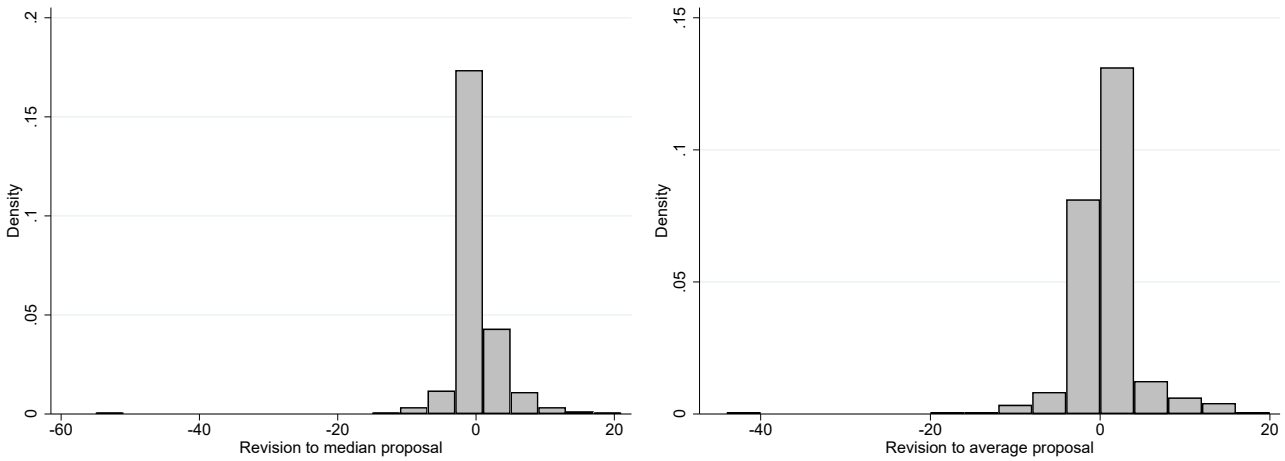


Figure 8: **Distribution of spreads between lowest and highest bid proposal**.

Many teams settled on the median proposal but other agreements could also be observed. Below we depict the distribution of the deviation of the final bid with respect to the median of the three initial bidding proposals within a team (Figure 2a) and the mean of the three initial bidding proposals (Figure 2b).

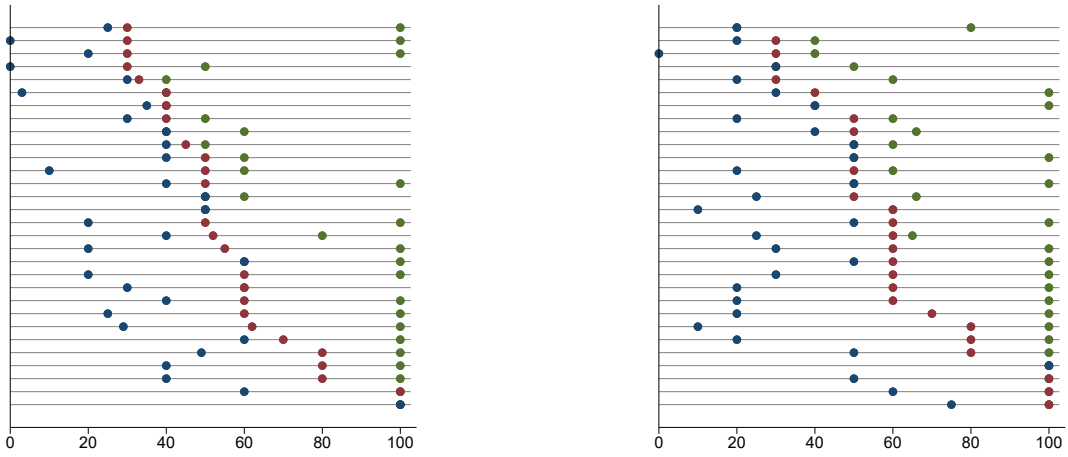


(a) Median of initial proposals (b) Mean of initial proposals

Figure 9: Deviation of final bidding agreement

The revision from the median proposal is, on average, 0.07 points in FPA team treatments, and the revision from the mean of initial proposals is, on average, 0.33.

When looking at team decision making in the investment task (part 3 of the experiment) we observe more heterogeneity. Figure 3 displays the initial investment proposals within a team in ascending order of the median proposal, split by auction type.

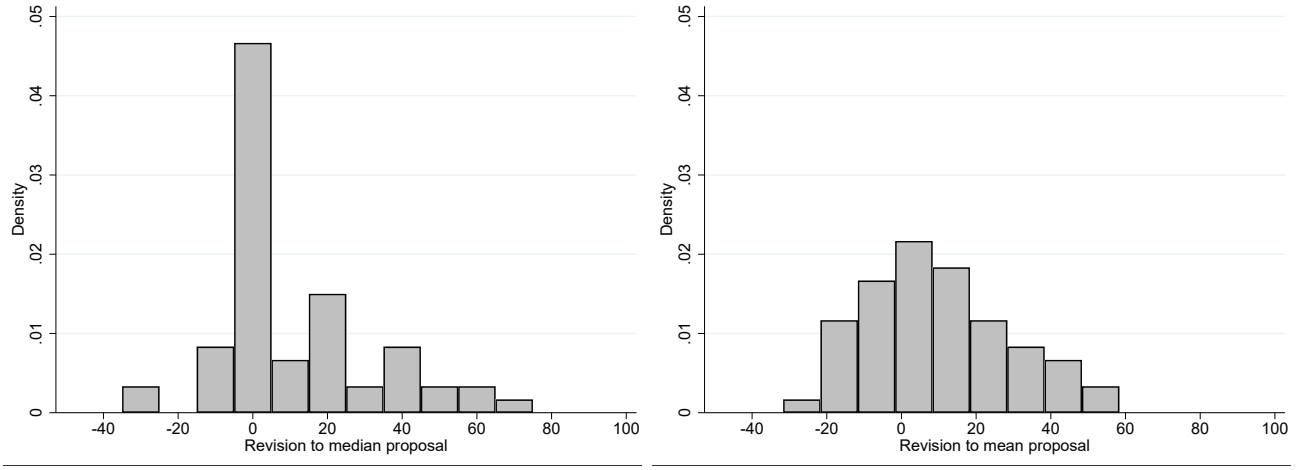


(a) FPA (b) EA

Figure 10: Initial investment proposals in teams

Again, the final team decision is frequently based on the median proposal, but other agreements are also common. Similarly to above, Figure 4 depicts the distribution of the deviation of the final investment decision with respect to the median of the three initial investment proposals within a

team (Figure 4a) and the mean of the three initial investment proposals (Figure 4b).



(a) Median of initial proposals

(b) Mean of initial proposals

Figure 11: Deviation of final investment decision

C.4 Additional Instructions

C.4.1 IND FPA

Welcome to the experiment and thank you for your participation!

From now on, please do not talk to other participants of the experiment.

General Information

This experiment analyzes economic decision-making. You can earn money in the experiment. The earnings will be paid to you privately in cash after the experiment ends.

The whole experiment takes approximately two hours and consists of 4 parts. At the beginning of each part, you will receive detailed instructions. The parts are independent of each other; decisions made in one part will not affect your earnings in another part. The sum of your earnings from the 4 parts will constitute your total payoff from the experiment. You will be informed about your total payoff after completion of the fourth part, and it will be paid out to you in cash at the end of the experiment.

If you have any questions after the instructions or during the experiment, please raise your hand. One of the experimenters will come to you and answer your questions in private. For the sake of linguistic simplicity, we only use masculine terms.

During the experiment, you and the other participants will be asked to make decisions. Sometimes you will interact with other participants. This means that your own decisions as well as the decisions of other participants can affect your total payoff. This will be determined according to the rules explained below.

A clock will run down in the top right corner of the screen while you make your decisions. This informs you of how much time you still have to make your decision. Sometimes this time restriction is binding and sometimes it is not. The details are explained below. The information screens, on which you do not need to make any decisions, will disappear when the clock runs out.

Payments

In parts 1-3 of the experiment, the payoffs are expressed in points, not Euros. The points will be converted into Euros at the end of the experiment. At the beginning of each part you will be informed of the exchange rate for the conversion. In part 4, the payoffs are expressed in Euros. For having shown up on time, you will receive €4 in addition to the money that you can earn

during the experiment.

Anonymity

We only evaluate aggregated data from the experiment and never link names to the data from the experiment. At the end of the experiment, you will be asked to sign a receipt regarding your earnings, which serves only for accounting purposes and cannot be linked to your behavior in the experiment. This experiment will be videotaped. The video records serve the research purpose of the experiment. Just act natural.

Tools

You will find a pen on your table. Please leave it there when the experiment ends.

Part 1

Exchange Rate

The exchange rate in part 1 is: **3 Points = 1 Euro**

Auctions

Part 1 consists of twelve independent auctions. In each auction, you bid for a good, which has a certain value for you and for the other bidders. For each auction, three out of six participants are randomly matched to bid for a good. We will call this a market (consisting of three bidders).

Each bidder receives a one-time initial endowment of 10 points.

Value of the Good

Each bidder receives information about the value of the good at the beginning of each auction. This value is determined independently for each bidder on a market; it means it is very likely that it will be different for different bidders in the same auction. The value for each bidder is drawn randomly between 0 and 100 points. Every value between 0 and 100 is equally likely (where 0 and 100 are also possible). Each bidder knows his own value for the good but not the values of the other two bidders on the market.

Decision Making

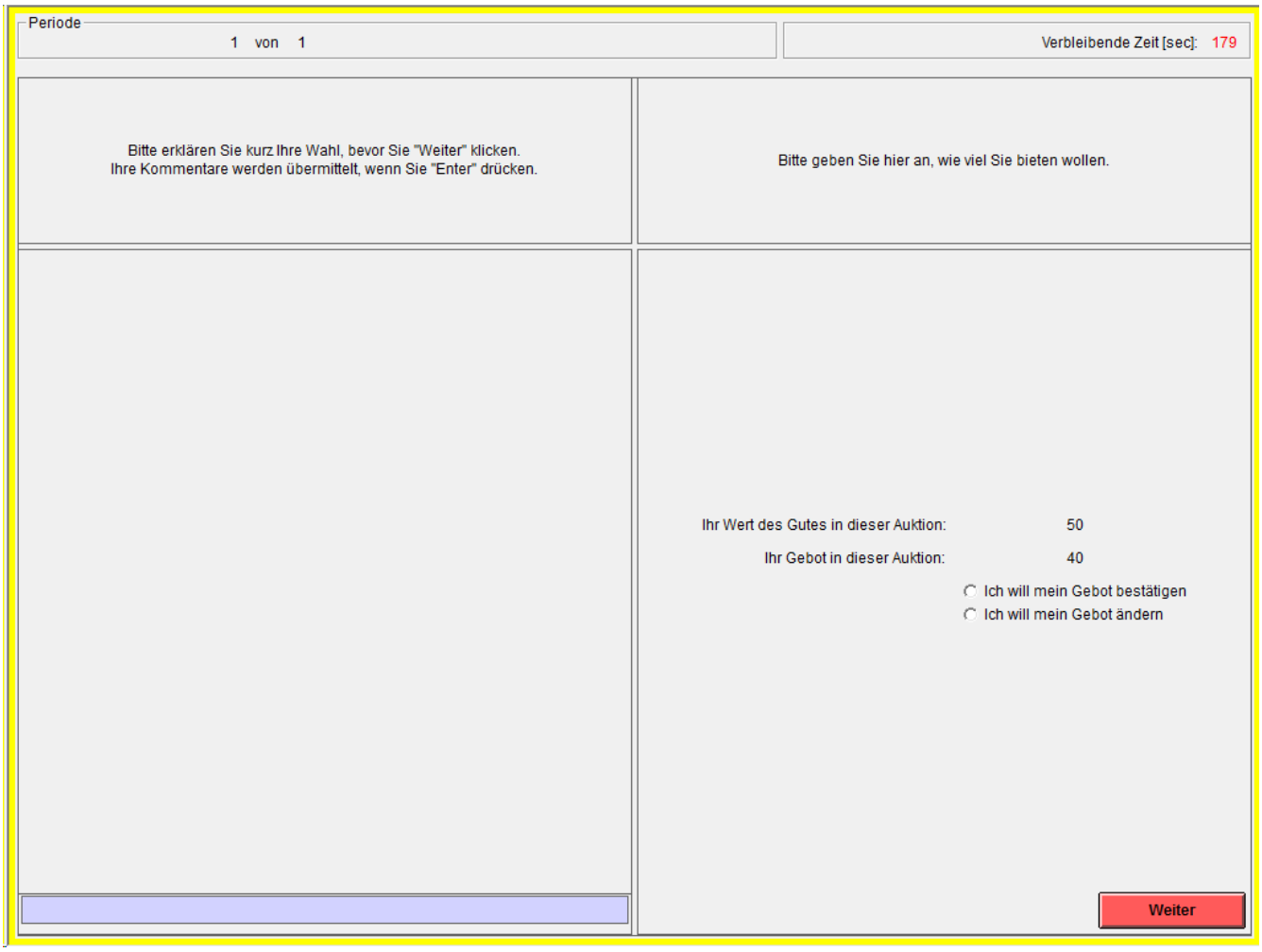
In this part, each bidder will place a bid. Each bidder decides on a bid simultaneously. The decision is made in two stages:

In the first stage, you will be asked for a suggestion for the bid. You have 30 seconds to enter a suggestion in the middle of the screen and click on the "Next" button. This suggestion is not visible to the other bidders.

In the second stage, you have 180 seconds to explain your suggestion (You will see your suggestion from the first stage in the right part of the screen). The explanation is entered into the left part of the screen and it is not visible for all other bidders. Within the 180 seconds, you can modify your suggestion from the first stage **once**. When you are finished, please click on "Next".

Bids must always be integer numbers. The highest possible bid is 110 points.

All information can also be found on the screen, which will look like this:



On the left area of the screen you see a window, in which you can explain your choice of the bid. For this, please enter in the purple input field how and why you decided on your bid. When you are done with your explanation press the enter key (Return/Enter). Your explanation will then be transmitted to the computer and appear in the grey area of the window. Important: Press Enter in any case such that the explanation you wrote appears in the grey area.

On the right side of the screen, you see your suggestion for the bid from the first stage that you can either confirm or change. If you decide to confirm your bid, click on "I want to confirm my bid" and then on "Next". If you choose to change your bid, click on "I want to change my bid" and then on "Next". Thereafter you will see an input field where you can enter your new bid.

Payoffs

The bidder with the highest bid among the three bidders wins the auction. He pays his bid as the price for the good.

Payoff for the bidder = Value of the good – Bid of the bidder

For example: The three bids are 80, 60, 40; the bidder who has bid 80 wins the auction. This bidder receives the value of the good and pays 80 points.

If all three bidders bid 0, the good will not be sold. If two or three bidders have submitted the same highest bid (greater than 0), it is determined randomly which bidder wins the auction and pays for the good.

If a bidder does not receive the good in an auction, he does not earn anything in this auction.

However, each bidder retains the initial endowment of 10 points (with one exception: see below).

Feedback and Further Auctions

Once an auction ends, a new auction starts with exactly the same rules. There are in total 12 auctions in this part of the experiment. In each auction, the six bidders in the room are randomly

re-matched to form two markets. Again, each market consists of three bidders.

At the end of the experiment, one auction is randomly drawn as relevant for your payoff. Your payoff from Part 1 is based on the points you have earned in this auction (it means: the value minus the bid if you won the auction; or zero if you did not win the auction) plus the initial endowment of 10 points.

Attention!

You can also lose money in an auction. If you win an auction with a bid that is above the value of the good, you are going to make losses! Losses are deducted from your initial endowment (and if it is not enough: from your earnings from the other parts of the experiment).

If you have any questions, please raise your hand. An experimenter will come to you and answer your questions.

Part 2

Exchange Rate

The exchange rate in part 2 is: **3 Points = 1 Euro**

Auctions

Part 2 contains only one auction. In this auction, you bid for a good, which has a certain value for you and for the other bidders. Three bidders are randomly matched again for the auction and form a market to bid for a good.

Each bidder receives a one-time initial endowment of 10 points.

Value of the Good

Each bidder receives information about the value of the good at the beginning of the auction. This value is determined independently for each bidder on a market; it means it is very likely that it will be different for different bidders. The value for each bidder is drawn randomly between 0 and 100 points. Every value between 0 and 100 is equally likely (where 0 and 100 are also possible). Each bidder knows his own value for the good but not the values of the other two bidders on the

market.

Decision Making

In this part, each bidder will place a bid. Each bidder decides on a bid simultaneously; there is no repetition. Again, the decision is made in two stages:

In the first stage, you will be asked for a suggestion for the bid. You have 30 seconds to enter a suggestion in the middle of the screen and click on the "Next" button. This suggestion is not visible to the other bidders.

In the second stage, you have 180 seconds to explain your suggestion (You will see your suggestion from the first stage in the right part of the screen). The explanation is entered into the left part of the screen and it is not visible for all other bidders. Within the 180 seconds, you can modify your suggestion from the first stage **once**. When you are finished, please click on "Next".

Bids must always be integer numbers. The highest possible bid is 110 points.

End of the Auction

The bidder with the highest bid among the three bidders wins the auction. The bidder pays the second highest bid on the market as the price for the good.

Payoff for the bidder = Value of the good – The second highest bid on the market

Example: The three bids are 80, 60, 40; the bidder who has bid 80 wins the auction. This bidder receives the value of the good and pays 60 points.

If all three bidders bid 0, the good will not be sold. If two or three bidders have submitted the same highest bid (greater than 0), it is determined randomly, which bidder wins the auction and pays for the good.

If a bidder does not receive the good in an auction, he does not earn anything in this auction.

However, each bidder retains the initial endowment of 10 points (with one exception: see below).

Attention!

You can also lose money in this auction. If you pay a price above the value of the good (=when the second highest bid is higher than the value of the good and you win the auction), you are going to make losses! Losses are deducted from your initial endowment (and if it is not enough: from your earnings from the other parts of the experiment).

There is only one auction in Part 2.

Summary

Only two things change in comparison to Part 1:

- There is only one auction.
- The winner of the auction pays the second highest bid on the market for the good.

If you have any questions, please raise your hand. An experimenter will come to you and answer your questions.

Part 3

Exchange Rate

The exchange rate in part 3 is: **40 Points = 1 Euro**

Each participant receives 100 points. You can invest any amount between 0 and 100 points (0 and 100 are also possible) in a risky asset and keep the rest. We denote the amount of points that you invest in the risky asset as R. With a probability of 50%, the amount R is multiplied by 2.5; with a probability of 50%, the amount R is lost. Each participant receives from their investment either $2.5 \times R$ or nothing with the same probability. Each participant keeps the amount $100 - R$ that was not invested.

Decision Making

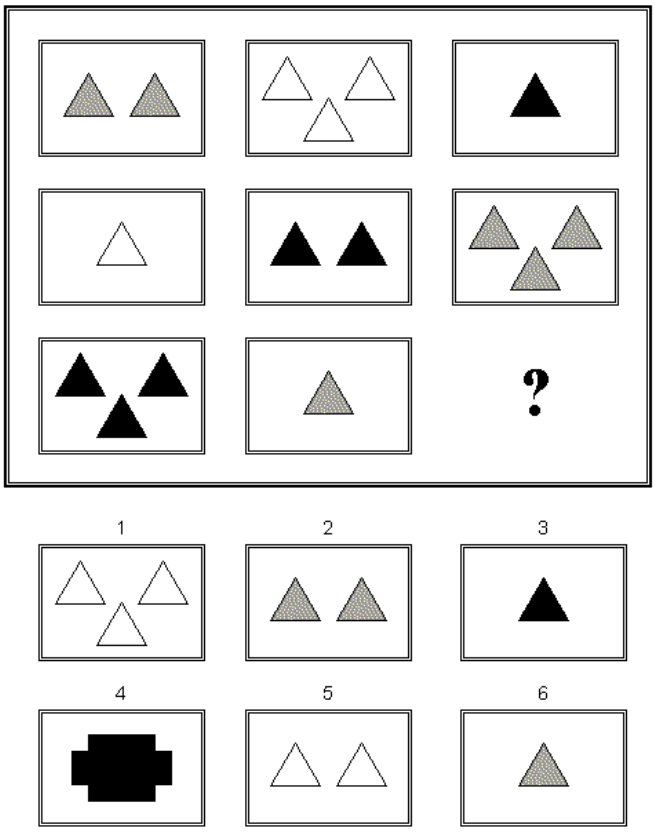
You have 150 seconds to decide on the amount R to be invested. If you fail to make a decision within 150 seconds, you will not earn any money in part 3.

After a valid decision, the computer will simulate the investment and you will find out how much you have earned.

Part 4

In this part, we ask you to solve 8 problems. All of them have the same structure.

You see a box with a matrix, i.e. a rectangular pattern of different symbols. Each matrix has 3 rows and 3 columns. The symbol in the lower right corner is missing. Below the matrix, there are 6 symbols to choose from. Only one of them fits into the pattern and should replace the empty field. Here is an example.



The correct solution is "Number 5". Your task is to identify the correct symbol. Once you are done with one problem, the next problem will appear on the screen. You cannot go back to the previous answers once you have submitted a solution.

For each problem you have 90 seconds to solve it. For each correct solution you receive 50 Cents. If the answer is wrong or you fail to provide an answer within the time limit, you will not get anything.

At the end of part 4, you will learn how many problems you have solved correctly. Before we pay out your earnings to you in cash, we ask you to fill out a short questionnaire. Then the experiment ends.

C.4.2 IND EA

Welcome to the experiment and thank you for your participation!

From now on, please do not talk to other participants of the experiment.

General Information

This experiment analyzes economic decision-making. You can earn money in the experiment. The earnings will be paid to you privately in cash after the experiment ends.

The whole experiment takes approximately two hours and consists of 4 parts. At the beginning of each part, you will receive detailed instructions. The parts are independent of each other; decisions made in one part will not affect your earnings in another part. The sum of your earnings from the 4 parts will constitute your total payoff from the experiment. You will be informed about your total payoff after completion of the fourth part, and it will be paid out to you in cash at the end of the experiment.

If you have any questions after the instructions or during the experiment, please raise your hand. One of the experimenters will come to you and answer your questions in private. For the sake of linguistic simplicity, we only use masculine terms.

During the experiment, you and the other participants will be asked to make decisions. Sometimes you will interact with other participants. This means that your own decisions as well as the decisions of other participants can affect your total payoff. This will be determined according to the rules explained below.

A clock will run down in the top right corner of the screen while you make your decisions. This informs you of how much time you still have to make your decision. Sometimes this time restriction is binding and sometimes it is not. The details are explained below. The information screens, on which you do not need to make any decisions, will disappear when the clock runs out.

Payments

In parts 1-3 of the experiment, the payoffs are expressed in points, not Euros. The points will be converted into Euros at the end of the experiment. At the beginning of each part you will be informed of the exchange rate for the conversion. In part 4, the payoffs are expressed in Euros. For having shown up on time, you will receive €4 in addition to the money that you can earn during the experiment.

Anonymity

We only evaluate aggregated data from the experiment and never link names to the data from the experiment. At the end of the experiment, you will be asked to sign a receipt regarding your earnings, which serves only for accounting purposes and cannot be linked to your behavior in the experiment. This experiment will be videotaped. The video records serve the research purpose of the experiment. Just act natural.

Tools

You will find a pen on your table. Please leave it there when the experiment ends.

Part 1

Exchange Rate

The exchange rate in part 1 is: **3 Points = 1 Euro**

Auctions

Part 1 consists of eight independent auctions. In each auction, you bid for a good, which has a certain value for you and for the other bidders. For each auction, three out of six participants are randomly matched to bid for a good. We will call this a market (consisting of three bidders).

Each bidder receives a one-time initial endowment of 10 points.

Value of the Good

Each bidder receives information about the value of the good at the beginning of each auction. This value is determined independently for each bidder on a market; it means it is very likely that it will be different for different bidders in the same auction. The value for each bidder is drawn randomly between 0 and 100 points. Every value between 0 and 100 is equally likely (where 0 and 100 are also possible). Each bidder knows his own value for the good but not the values of the other two bidders on the market.

Bidding rounds in an auction

Each auction consists of bidding rounds.

At the beginning of each auction (before the first bidding round) all bidders on the market learn their value of the good for this auction.

At the beginning of each bidding round all bidders on the market are informed of the current price in the auction and the status of the other bidders, i.e., which bidders are still in the auction and which bidders have already left the auction.

The current price in the first bidding round is zero. From the second bidding round onwards, the current price equals the highest bid from the previous bidding round. For example, in the second bidding round the current price is the highest bid from the first bidding round. However, in each round the current price must be overbid by a so-called increment. This means, that the minimum bid in every round is the current price (=the highest bid from the previous round) plus the increment.

$$\text{Minimum bid} = \text{current price} + \text{increment}$$

The size of the increment depends on the current price. The table below shows, how the increment depends on the current price.

Conditions	Increment	Minimum bid
Current price in this round ≤ 30	10	Current price + 10
$30 <$ current price in this round ≤ 45	5	Current price + 5
$45 <$ current price in this round ≤ 90	3	Current price + 3
Current price in this round > 90	2	Current price + 2

The minimum bid in the first bidding round is therefore 10 points. Certainly, you can also make higher bids if you wish.

Bids must always be integer numbers. The highest possible bid is 110 points.

Decision Making

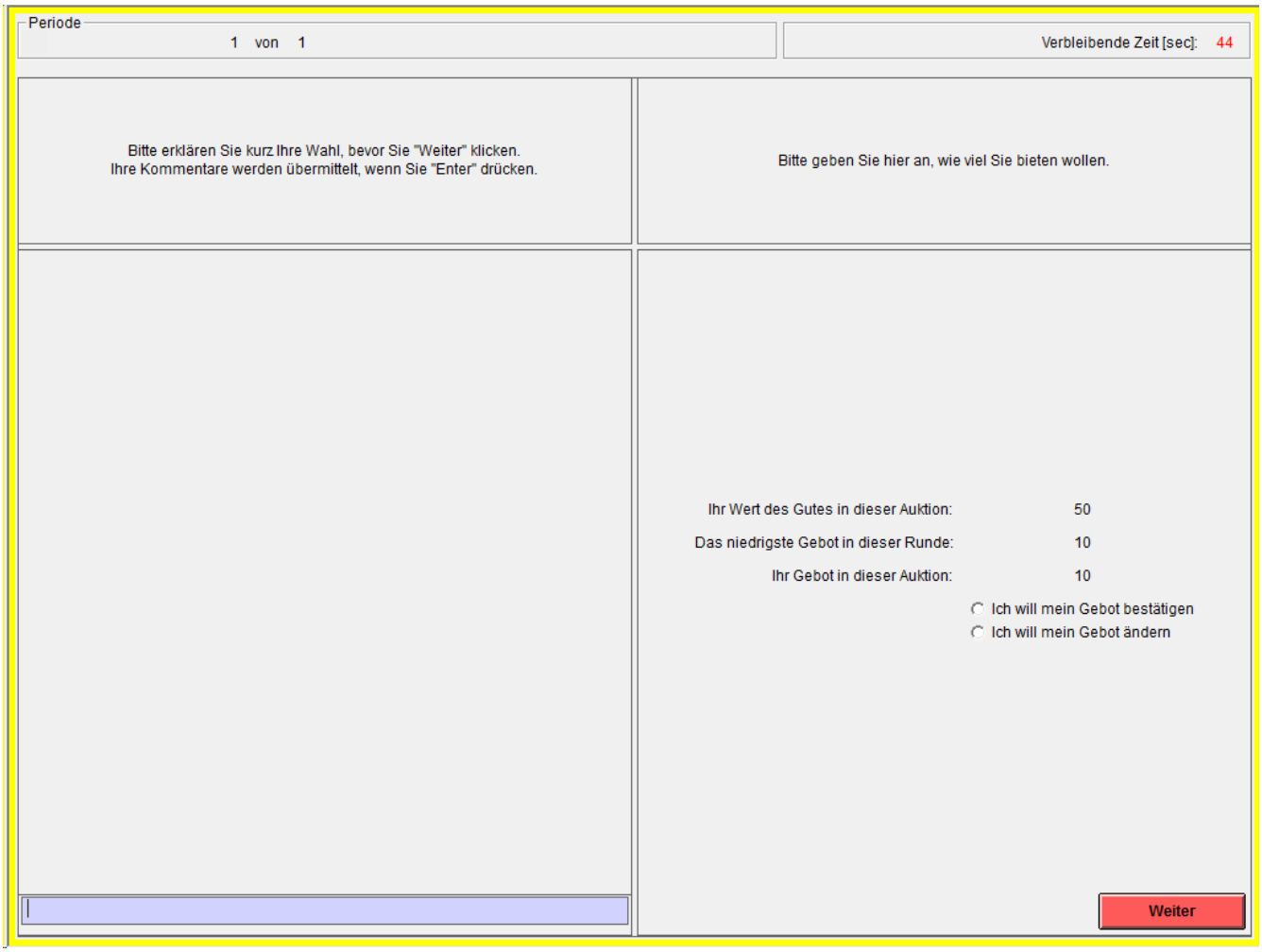
In every bidding round each bidder on the market decides as follows: Either he makes a bid that is equal to or larger than the minimum bid; or he exits the auction. For every bidder this decision is made in two stages:

In the first stage, you will be asked for a suggestion for the bid (of course, the suggestion can also be to exit the auction). You have 30 seconds to enter a suggestion in the middle of the screen and click on the "Next" button. This suggestion is not visible to the other bidders.

In the second stage, you have 45 seconds to explain your suggestion (You will see your suggestion from the first stage in the right part of the screen). The explanation is entered into the left part of the screen and it is not visible for all other bidders. Within the 45 seconds, you can modify your suggestion from the first stage **once** respectively revise your decision to exit the auction **once**. When you are finished, please click on "Next".

If a bidder exits the auction, this auction is ended for this bidder. It is not possible to re-enter this auction at a later stage.

All information can also be found on the screen, which will look like this:



On the left area of the screen you see a window, in which you can explain your choice of the bid. For this, please enter in the purple input field how and why you decided on your bid. When you are done with your explanation press the enter key (Return/Enter). Your explanation will then be transmitted to the computer and appear in the grey area of the window. Important: Press Enter in any case such that the explanation you wrote appears in the grey area.

On the right side of the screen, you see your suggestion for the bid from the first stage that you can either confirm or change. If you decide to confirm your bid, click on "I want to confirm my bid" and then on "Next". If you choose to change your bid, click on "I want to change my bid" and then on "Next". Thereafter you will see an input field where you can enter your new bid.

Payoffs An auction ends when there is only one out of the three bidders left in the auction. This bidder pays his bid from the last bidding round as the price for the good.

Payoff for the bidder = Value of the good – Bid in the last bidding round

If all three bidders on the market exit the auction in the first round, the good will not be sold. If two or three bidders exit simultaneously in a later bidding round, the good will be randomly allocated to one of the bidders who were still present in the previous bidding round. This bidder will pay his bid from the previous round for the good.

If a bidder does not receive the good in an auction, he does not earn anything in this auction.

However, each bidder retains the initial endowment of 10 points (with one exception: see below).

Feedback and Further Auctions

Once an auction ends, a new auction starts with exactly the same rules. There are in total 8 auctions in this part of the experiment. In each auction, the six bidders in the room are randomly re-matched to form two markets. Again, each market consists of three bidders.

At the end of the experiment, one auction is randomly drawn as relevant for your payoff. Your

payoff from Part 1 is based on the points you have earned in this auction (it means: the value minus the price if you won the auction; or zero if you did not win the auction) plus the initial endowment of 10 points.

Attention!

You can also lose money in an auction. If you pay a price that is above the value of the good, you are going to make losses! Losses are deducted from your initial endowment (and if it is not enough: from your earnings from the other parts of the experiment).

If you have any questions, please raise your hand. An experimenter will come to you and answer your questions.

Part 2

Exchange Rate

The exchange rate in part 2 is: **3 Points = 1 Euro**

Auctions

Part 2 contains only one auction. In this auction, you bid for a good, which has a certain value for you and for the other bidders. Three bidders are randomly matched again for the auction and form a market to bid for a good.

Each bidder receives a one-time initial endowment of 10 points.

Value of the Good

Each bidder receives information about the value of the good at the beginning of the auction. This value is determined independently for each bidder on a market; it means it is very likely that it will be different for different bidders. The value for each bidder is drawn randomly between 0 and 100 points. Every value between 0 and 100 is equally likely (where 0 and 100 are also possible). Each bidder knows his own value for the good but not the values of the other two bidders on the market.

Decision Making

In this part, each bidder will place a bid. Each bidder decides on a bid simultaneously; there are no bidding rounds and there is no repetition. Again, the decision is made in two stages:

In the first stage, you will be asked for a suggestion for the bid. You have 30 seconds to enter a suggestion in the middle of the screen and click on the "Next" button. This suggestion is not visible to the other bidders.

In the second stage, you have 180 seconds to explain your suggestion (You will see your suggestion from the first stage in the right part of the screen). The explanation is entered into the left part of the screen and it is not visible for all other bidders. Within the 180 seconds, you can modify your suggestion from the first stage **once**. When you are finished, please click on "Next".

Bids must always be integer numbers. The highest possible bid is 110 points.

End of the Auction

The bidder with the highest bid among the three bidders wins the auction. The bidder pays the second highest bid on the market as the price for the good.

Payoff for the bidder = Value of the good – The second highest bid on the market

Example: The three bids are 80, 60, 40; the bidder who has bid 80 wins the auction. This bidder receives the value of the good and pays 60 points.

If all three bidders bid 0, the good will not be sold. If two or three bidders have submitted the same highest bid (greater than 0), it is determined randomly, which bidder wins the auction and pays for the good.

If a bidder does not receive the good in an auction, he does not earn anything in this auction.

However, each bidder retains the initial endowment of 10 points (with one exception: see below).

Attention!

You can also lose money in this auction. If you pay a price above the value of the good (=when

the second highest bid is higher than the value of the good and you win the auction), you are going to make losses! Losses are deducted from your initial endowment (and if it is not enough: from your earnings from the other parts of the experiment).

There is only one auction in Part 2.

Summary

Only three things change in comparison to Part 1:

- There is only one auction.
- Every bidder only makes one bid; there are no bidding rounds.
- The winner of the auction pays the second highest bid on the market for the good.

If you have any questions, please raise your hand. An experimenter will come to you and answer your questions.

Part 3

Exchange Rate

The exchange rate in part 3 is: **40 Points = 1 Euro**

Each participant receives 100 points. You can invest any amount between 0 and 100 points (0 and 100 are also possible) in a risky asset and keep the rest. We denote the amount of points that you invest in the risky asset as R. With a probability of 50%, the amount R is multiplied by 2.5; with a probability of 50%, the amount R is lost. Each participant receives from their investment either $2.5 \times R$ or nothing with the same probability. Each participant keeps the amount $100 - R$ that was not invested.

Decision Making

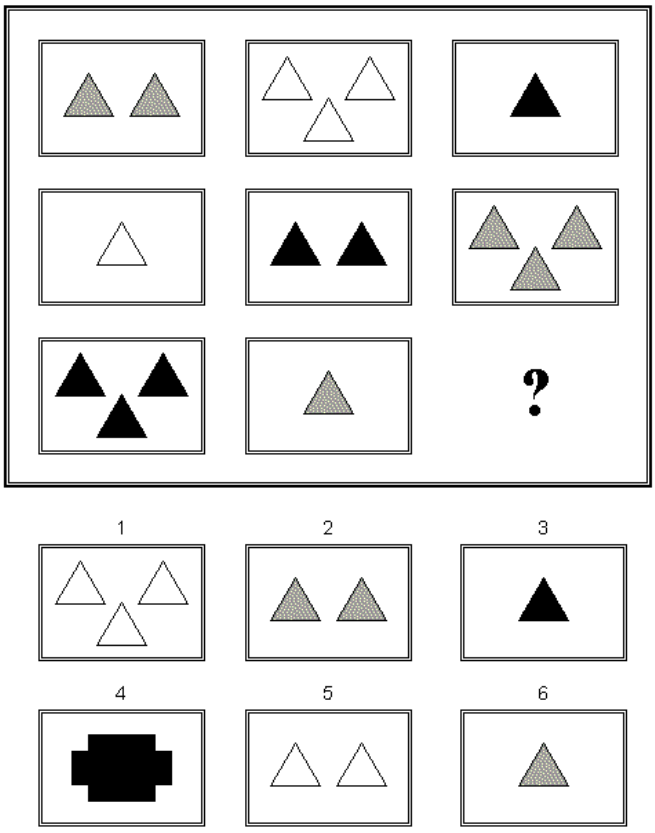
You have 150 seconds to decide on the amount R to be invested. If you fail to make a decision within 150 seconds, you will not earn any money in part 3.

After a valid decision, the computer will simulate the investment and you will find out how much you have earned.

Part 4

In this part, we ask you to solve 8 problems. All of them have the same structure.

You see a box with a matrix, i.e. a rectangular pattern of different symbols. Each matrix has 3 rows and 3 columns. The symbol in the lower right corner is missing. Below the matrix, there are 6 symbols to choose from. Only one of them fits into the pattern and should replace the empty field. Here is an example.



The correct solution is "Number 5". Your task is to identify the correct symbol. Once you are done with one problem, the next problem will appear on the screen. You cannot go back to the previous answers once you have submitted a solution.

For each problem you have 90 seconds to solve it. For each correct solution you receive 50 Cents. If the answer is wrong or you fail to provide an answer within the time limit, you will not get anything.

At the end of part 4, you will learn how many problems you have solved correctly.

Before we pay out your earnings to you in cash, we ask you to fill out a short questionnaire. Then the experiment ends.

C.4.3 TEAM EA

Welcome to the experiment and thank you for your participation!

From now on, please do not talk to other participants of the experiment.

General Information

This experiment analyzes economic decision-making. You can earn money in the experiment. The earnings will be paid to you privately in cash after the experiment ends.

The whole experiment takes approximately two hours and consists of 4 parts. At the beginning of each part, you will receive detailed instructions. The parts are independent of each other; decisions made in one part will not affect your earnings in another part. The sum of your earnings from the 4 parts will constitute your total payoff from the experiment. You will be informed about your total payoff after completion of the fourth part, and it will be paid out to you in cash at the end of the experiment.

If you have any questions after the instructions or during the experiment, please raise your hand. One of the experimenters will come to you and answer your questions in private. For the sake of linguistic simplicity, we only use masculine terms.

During the experiment, you and the other participants will be asked to make decisions. Sometimes you will interact with other participants. This means that your own decisions as well as the decisions of other participants can affect your total payoff. This will be determined according to the rules explained below.

A clock will run down in the top right corner of the screen while you make your decisions. This informs you of how much time you still have to make your decision. Sometimes this time restriction is binding and sometimes it is not. The details are explained below. The information screens, on which you do not need to make any decisions, will disappear when the clock runs out.

Payments

In parts 1-3 of the experiment, the payoffs are expressed in points, not Euros. The points will be converted into Euros at the end of the experiment. At the beginning of each part you will be informed of the exchange rate for the conversion. In part 4, the payoffs are expressed in Euros. For having shown up on time, you will receive €4 in addition to the money that you can earn during the experiment.

Anonymity

We only evaluate aggregated data from the experiment and never link names to the data from the experiment. At the end of the experiment, you will be asked to sign a receipt regarding your earnings, which serves only for accounting purposes and cannot be linked to your behavior in the experiment. This experiment will be videotaped. The video records serve the research purpose of the experiment. Just act natural.

Tools

You will find a pen on your table. Please leave it there when the experiment ends.

Groups

In the experiment, you will be a member of one out of six groups. Each group consists of three members. The allocation to the groups is random. The groups remain unchanged throughout the experiment.

Part 1

Exchange Rate

The exchange rate in part 1 is: **3 Points = 1 Euro**

Auctions

Part 1 consists of eight independent auctions. In each auction, you bid in your group for a good, which has a certain value for you and your group. For each auction, three groups are randomly matched to bid for a good. We will call this a market (consisting of three groups with three members each).

Each group member receives a one-time initial endowment of 10 points.

Value of the Good

Each group receives information about the value of the good at the beginning of each auction. This value is determined independently for each group on a market; it means it is very likely that it will be different for different groups in the same auction. The value for each group is drawn

randomly between 0 and 100 points. Every value between 0 and 100 is equally likely (where 0 and 100 are also possible). Each bidder group knows its own value for the good but not the values of the other two groups on the market.

Bidding rounds in an auction

Each auction consists of bidding rounds.

At the beginning of each auction (before the first bidding round) all groups on the market learn their value of the good for this auction.

At the beginning of each bidding round all groups on the market are informed of the current price in the auction and the status of the three bidding groups, i.e., which groups are still in the auction and which groups have already left the auction.

The current price in the first bidding round is zero. From the second bidding round onwards, the current price equals the highest bid from the previous bidding round. For example, in the second bidding round the current price is the highest bid from the first bidding round. However, in each round the current price must be overbid by a so-called increment. This means, that the minimum bid in every round is the current price (=the highest bid from the previous round) plus the increment.

$$\text{Minimum bid} = \text{current price} + \text{increment}$$

The size of the increment depends on the current price. The table below shows, how the increment depends on the current price.

Conditions	Increment	Minimum bid
Current price in this round ≤ 30	10	Current price + 10
$30 <$ current price in this round ≤ 45	5	Current price + 5
$45 <$ current price in this round ≤ 90	3	Current price + 3
Current price in this round > 90	2	Current price + 2

The minimum bid in the first bidding round is therefore 10 points. Certainly, you can also make higher bids if you wish.

Bids must always be integer numbers. The highest possible bid is 110 points.

Decision Making

In every bidding round each group on the market decides as follows: Either to make a bid that is equal to or larger than the minimum bid; or to exit the auction. Within each group this decision is made in two stages:

In the first stage, you will be asked individually for a suggestion for the group bid (of course, the suggestion can also be to exit the auction). You have 30 seconds to enter a suggestion in the middle of the screen and click on the "Next" button. After all group members in your group have entered their suggestions, the second stage starts.

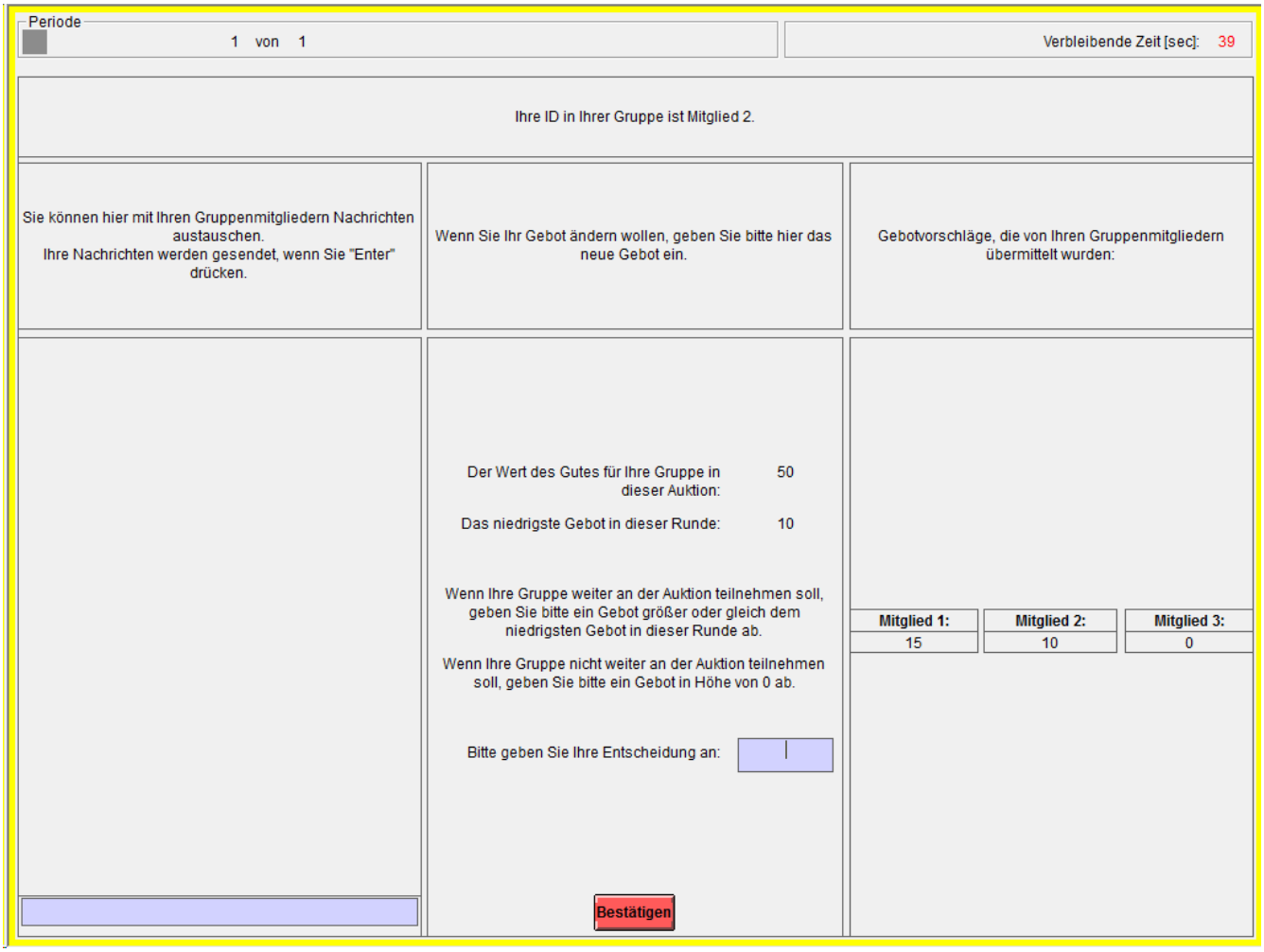
In the second stage, the group has 45 seconds to agree on a common decision. A decision is considered valid only if exactly the same decision is entered by all three group members (you can see the decisions of your group members in the right part of your screen). Within the 45 seconds, all group members can modify their decisions as often as they want. You can also discuss your decisions with the other group members – this discussion takes place in a chat window in the left part of the screen.

The following rules apply for the chat: (i) conversation in German; (ii) no insults, threats or similar violations of etiquette; (iii) no information that would allow to identify you (e.g. seat number, name, gender, field of study etc.). If you break these rules, you will be excluded from the experiment.

The chat should help you to coordinate within the group. If a group fails to reach a common decision within 45 seconds, this group exits the auction.

If a group exits the auction, this auction is ended for this group. It is not possible to re-enter this auction at a later stage.

All information can also be found on the screen, which will look like this:



In the upper area of the screen, you can see your identification number (ID) in your group (e.g. "Your ID in your group is member 2"). Your ID will be retained for the entire experiment.

On the left side of the screen, you will see a chat window where you can exchange messages with the other members of the group. To do so, enter your message in the purple field at the bottom left and then press the enter key (Return/Enter). Your entry will be transmitted to the computer and appear in the grey area of the window. The other participants in your group will see your message and you will also see the messages of the other group members above the purple input field. Important: If you want to send a message, press the enter key (Return/Enter) so that the text you have written will appear in the grey area.

On the right side of the screen, you will see your group members' suggestions for the bid. If you choose to change your bid, you can do it in the center of the screen. Your bid will be changed

when you enter a new bid in the input field in the middle and click on "Confirm" button. Then your new bid will replace your previous bid on the right side of the screen.

Payoffs

An auction ends when there is only one out of the three groups left in the auction. This group pays their bid from the last bidding round as the price for the good. Hence, each member in this group earns the following amount in this auction:

Payoff for each group member = Value of the good – Bid of his group in the last bidding round

If all three groups on the market exit the auction in the first round, the good will not be sold. If two or three groups exit simultaneously in a later bidding round, the good will be randomly allocated to one of the groups who were still present in the previous bidding round. This group will pay their bid from the previous round for the good.

If a group does not receive the good in an auction, it does not earn anything in this auction.

However, each group member retains the initial endowment of 10 points (with one exception: see below).

Feedback and Further Auctions

Once an auction ends, a new auction starts with exactly the same rules. There are in total 8 auctions in this part of the experiment. In each auction, the six bidder groups in the room are randomly re-matched to form two markets. The three members of a group remain unchanged.

At the end of the experiment, one auction is randomly drawn as relevant for your payoff. Your payoff from Part 1 is based on the points you have earned in this auction (it means: the value minus the price if your group won the auction; or zero if your group did not win the auction) plus the initial endowment of 10 points.

Attention!

You can also lose money in an auction. If your group pays a price that is above the value of the good, you are going to make losses! Losses are deducted from your initial endowment (and if it is not enough: from your earnings from the other parts of the experiment).

If you have any questions, please raise your hand. An experimenter will come to you and answer your questions.

Part 2

Exchange Rate

The exchange rate in part 2 is: **3 Points = 1 Euro**

Auctions

Part 2 contains only one auction. In this auction, you bid in your group for a good, which has a certain value for you and your group. Three groups are randomly matched again for the auction and form a market to bid for a good.

Each group member receives a one-time initial endowment of 10 points.

Value of the Good

Each group receives information about the value of the good at the beginning of the auction. This value is determined independently for each group on a market; it means it is very likely that it will be different for different groups. The value for each group is drawn randomly between 0 and 100 points. Every value between 0 and 100 is equally likely (where 0 and 100 are also possible). Each bidder group knows its own value for the good but not the values of the other two groups on the market.

Decision Making

In this part, each group will place a bid. Each group decides on a bid simultaneously; there are no bidding rounds and there is no repetition. The decision within the group is made in two stages:

In the first stage, you will be asked individually for a suggestion for the group bid. You have 30 seconds to enter a suggestion in the middle of the screen and click on the "Next" button. After all group members in your group have entered their suggestions, the second stage starts.

In the second stage, the group has 180 seconds to agree on a common decision. A decision is considered valid only if exactly the same decision is entered by all three group members (you can see the decisions of your group members in the right part of your screen). Within the 180 seconds, all group members can modify their decisions as often as they want. You can also discuss your decisions with the other group members – this discussion takes place in a chat window in the left part of the screen.

The following rules apply for the chat: (i) conversation in German; (ii) no insults, threats or similar violations of etiquette; (iii) no information that would allow to identify you (e.g. seat number, name, gender, field of study etc.). If you break these rules, you will be excluded from the experiment.

The chat should help you to coordinate within the group. If a group fails to reach a common decision within 180 seconds, a bid of 0 will be assumed.

Bids must always be integer numbers. The highest possible bid is 110 points.

End of the Auction

The group with the highest bid among the three groups wins the auction. The group pays the second highest bid as the price for the good. Hence, each member in this group earns the following amount in the auction:

Payoff for each group member = Value of the good – The second highest bid on the market

Example: The three group bids are 80, 60, 40; the group which has bid 80 wins the auction. Each member of the winning group receives the value of the good and pays 60 points.

If all three groups bid 0, the good will not be sold. If two or three groups have submitted the same highest bid (greater than 0), it is determined randomly, which group wins the auction and pays for the good.

If a group does not receive the good in an auction, it does not earn anything in this auction.

However, each group member retains the initial endowment of 10 points (with one exception: see below).

Attention!

You can also lose money in this auction. If your group pays a price above the value of the good (=when the second highest bid is higher than the value of the good and you win the auction), you are going to make losses! Losses are deducted from your initial endowment (and if it is not enough: from your earnings from the other parts of the experiment).

There is only one auction in Part 2.

Summary

Only three things change in comparison to Part 1:

- There is only one auction.
- Every group only makes one bid; there are no bidding rounds.
- The winner of the auction pays the second highest bid on the market for the good.

If you have any questions, please raise your hand. An experimenter will come to you and answer your questions.

Part 3

Exchange Rate

The exchange rate in part 3 is: **40 Points = 1 Euro**

Each group member receives 100 points. Your group can invest any amount between 0 and 100 points (0 and 100 are also possible) in a risky asset and keep the rest. We denote the amount of points that your group invests in the risky asset as R. With a probability of 50%, the amount R is multiplied by 2.5; with a probability of 50%, the amount R is lost. Each group member receives from their investment either $2.5 \times R$ or nothing with the same probability. Each group member

keeps the amount $100 - R$ that was not invested.

Decision Making

The decision within the group is again made in two stages, with the group being the same as in parts 1 and 2.

In the first stage, you will be asked individually for a suggestion for the amount R to be invested. You have 30 seconds to enter a suggestion in the middle of the screen and click the "Next" button. If you do not make a suggestion before the time is up, you will be automatically taken to the second stage without a suggestion.

In the second stage, the group has 120 seconds to agree on a decision on the amount R to be invested. A decision is considered valid only if exactly the same decision is entered by all three group members (you can see the decisions of your group members in the right part of your screen). Within the 180 seconds, all group members can modify their decisions as often as they want. You can also discuss your decisions with the other group members – this discussion takes place in a chat window in the left part of the screen.

The following rules apply for the chat: (i) conversation in German; (ii) no insults, threats or similar violations of etiquette; (iii) no information that would allow to identify you (e.g. seat number, name, gender, field of study etc.). If you break these rules, you will be excluded from the experiment.

The chat should help you to coordinate within the group. If your group fails to reach a common decision in 120 seconds, you will not earn any money in part 3.

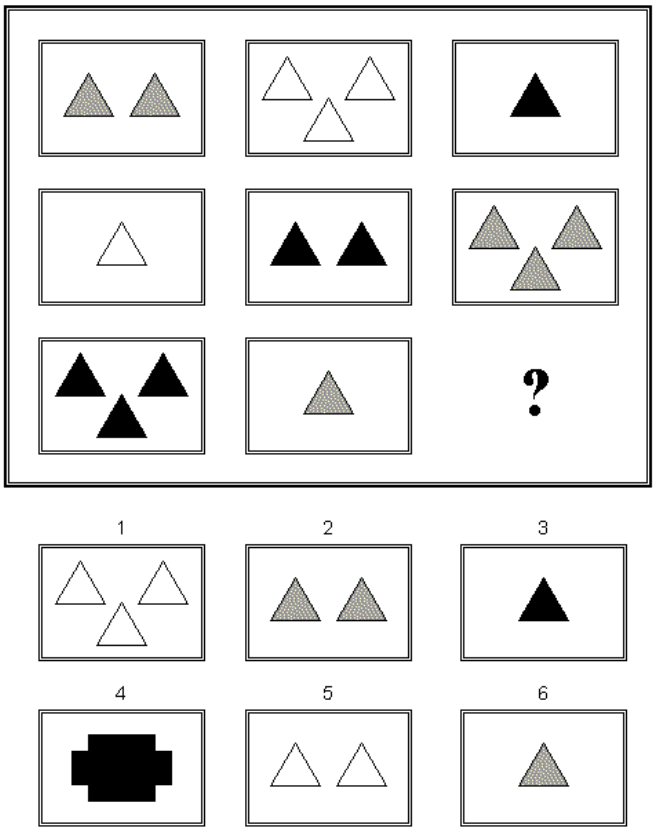
After a valid decision, the computer will simulate the investment and you will find out how much you have earned.

Part 4

In this part, we ask your group to solve 8 problems. All of them have the same structure.

You see a box with a matrix, i.e. a rectangular pattern of different symbols. Each matrix has 3 rows and 3 columns. The symbol in the lower right corner is missing. Below the matrix, there

are 6 symbols to choose from. Only one of them fits into the pattern and should replace the empty field. Here is an example.



The correct solution is "Number 5". The task for your group is to identify the correct symbol. Once you are done with one problem, the next problem will appear on the screen. You cannot go back to the previous answers once you have submitted a solution. For each correct solution, each group member receives 50 Cents. If the answer is wrong, you will not get anything.

The decision within the group is again made in two stages:

In the first stage you will be asked individually for a suggestion for the correct symbol. You have 30 seconds to enter a suggestion in the middle of the screen and click the "Next" Button. If you do not make a suggestion before the time is up, you will be automatically taken to the second stage without a suggestion.

In the second stage, the group has 60 seconds to agree on the correct symbol. A decision is considered valid only if exactly the same decision is entered by all three group members (you can see the decisions of your group members in the right part of your screen). Within the 60 seconds, all group members can modify their decisions as often as they want. You can also discuss your

decisions with the other group members – this discussion takes place in a chat window in the left part of the screen.

The following rules apply for the chat: (i) conversation in German; (ii) no insults, threats or similar violations of etiquette; (iii) no information that would allow to identify you (e.g. seat number, name, gender, field of study etc.). If you break these rules, you will be excluded from the experiment.

The chat should help you to coordinate within the group. If your group fails to reach a common decision in 60 seconds, you will not earn any money for the respective problem.

At the end of part 4, you will learn how many problems your group has solved correctly.

Before we pay out your earnings to you in cash, we ask you to fill out a short questionnaire. Then the experiment ends.