ONLINE SUPPLEMENTARY MATERIALS

DOES VOTE BUYING UNDERMINE CONFIDENCE IN BALLOT SECRECY? THEORY AND EXPERIMENTAL EVIDENCE

Contents

A Analysis of Mexico 2012 Panel Study Data

A.1 Variable measurement

Doubt about ballot secrecy: "I want you to tell me if you agree completely, agree somewhat, disagree somewhat, or disagree completely: My vote is always secret, unless I tell someone": 0=Agree completely; 1=Agree somewhat; 2=Disagree somewhat; 3=Disagree completely.

Private transfer offered: "In the last few weeks, has anyone done a favor for you or offered a gift or service in exchange for your vote? (YES) What did they offer you?" 0=No, 1=Yes.

Age: "How old are you?"

Female: "Sex (NOTE WITHOUT ASKING)" 0=Male, 1=Female.

Education: "What is the highest level of education you have completed? (IF STILL A STUDENT, MARK THE CURRENT LEVEL OF EDUCATION)" 0=No formal education, 1=Incomplete primary school, 2=Complete primary school, 3=Incomplete secondary/technical school, 4=Complete secondary/technical school, 5=Incomplete preparatory equivalent, 6=Complete preparatory equivalent, 7=Incomplete university, 8=Complete university or more; recoded as 0 if 1 or 2 is chosen, 1 if 3 or 4 is chosen, 2 if 5, 6, 7, or 8 is chosen, and 3 if 9 is chosen.

Urban: "Type" 0=Rural, 1=Urban.

Economic hardship: "Counting the whole family's earnings, would you say you…" 0=Easily cover expenses and can save, 1=Just cover expenses, but without great difficulty, 2=Have trouble covering expenses, 3= Have great difficulty covering expenses.

Num. of family benefit sources: "Do you or anyone in your family that lives in this house receive benefits from a) Seguro Popular, b) The Programa Oportunidades, c)Another government program?" The number of positive answers is counted.

Threat of benefit withdrawal: "Has anyone threatened to withhold benefits from any of the programs you participate in unless you vote a certain way? 0=No, 1=Yes.

Duration of community residence: "How long have you lived in your neighborhood?"

Catholic: "What is your religion?" 1=Catholic, 2=Christian, but not Catholic, 3=Protestant, 4=Other, 5=None; recoded as 1 if 1 is chosen and 0 otherwise.

Other religion: ""What is your religion?" 1=Catholic, 2=Christian, but not Catholic, 3=Protestant, 4=Other, 5=None; recoded as 1 if 2, 3, or 4 is chosen and 0 otherwise.

Political interest: "How interested are you in politics: a lot, some, a little, or not at all?" 0=Not at all, 1=A little, 2=Some, 3=A lot.

Partisanship: Responses to the following two questions are combined; “Generally, do you identify with the PAN, PRI or PRD? Do you identify strongly or weakly?” 1=Strong PAN, 2=Weak PAN, 3=Strong PRI, 4=Weak PRI, 5=Strong PRD, 6=Weak PRD, 7=Other, 8=None; (only those who responded ‘none’ to the previous question) “But do you sympathize a little more for one of the parties compared to the others?” 0=No, none, 1= PAN, 2=PRI, 3=PRD, 4=Other; coded as 0 if the respondent responded ‘No, none’ to the second question and 1 otherwise.

A.2 Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Max
			Wave 1		
Doubt about ballot secrecy	1,290	0.730	0.895	0	3
Private transfer offered	1,318	0.028	0.165	0	1
Age	1,328	40.365	15.747	18	90
Female	1,328	0.523	0.500	0	1
Education	1,327	1.581	0.866	0	3
Urban	1,328	0.765	0.424	0	1
Economic hardship	1,300	1.615	0.810	0	3
Num. of family benefit sources	1,328	0.779	0.815	0	3
Threat of family benefit withdrawal	1,312	0.044	0.206	0	1
Duration of community residence	1,327	21.936	16.287	0	82
Catholic	1,323	0.813	0.390	0	1
Other religion	1,323	0.116	0.321	0	1
Partisanship	1,222	0.791	0.407	0	1
Political interest	1,320	1.314	0.971	0	3
			Wave 2		
Doubt about ballot secrecy	1,123	0.662	0.817	0	3
Private transfer offered	1,150	0.055	0.228	0	1
Age	1,150	40.022	15.728	18	90
Female	1,150	0.547	0.498	0	1
Education	1,148	1.578	0.848	0	3
Urban	1,150	0.738	0.440	0	1
Economic hardship	1,136	1.682	0.801	0	3
Num. of family benefit sources	1,150	0.781	0.800	0	3
Threat of family benefit withdrawal	1,141	0.053	0.223	0	1
Duration of community residence	1,145	22.372	15.801	1	84
Catholic	1,144	0.841	0.366	0	1
Other religion	1,144	0.118	0.323	0	1
Partisanship	1,096	0.814	0.389	0	1
Political interest	1,143	1.256	0.895	0	3

Note: 923 respondents participated in both waves, and their answers are independently counted between the waves; 405 and 227 respondents participated only in the first and second wave, respectively.

A.3 Regression results: vote buying offers and beliefs about ballot secrecy

	Dependent variable:		
	Doubt about ballot secrecy		
	(1)	(2)	(3)
Private transfer offered	0.401	0.449*	0.451*
	(0.207)	(0.211)	(0.214)
Wave	-0.193*	-0.184	-0.120
	(0.092)	(0.094)	(0.098)
Panel respondent	0.052	0.111	0.062
	(0.119)	(0.123)	(0.129)
New respondent	0.486**	0.515**	0.455*
	(0.187)	(0.191)	(0.199)
Age		-0.011**	-0.010**
		(0.003)	(0.003)
Female		-0.059	-0.113
		(0.083)	(0.087)
Education		-0.063	-0.064
		(0.057)	(0.060)
Urban		-0.064	-0.094
		(0.127)	(0.132)
Economic hardship		0.059	0.064
		(0.056)	(0.058)
Num. of family benefit programs		-0.077	-0.070
		(0.055)	(0.058)
Threat of family benefit withdrawal		-0.111	-0.101
		(0.208)	(0.216)
Duration of community residence		-0.001	-0.001
		(0.003)	(0.003)
Catholic		-0.280	-0.291
		(0.180)	(0.189)
Other religion		-0.193	-0.251
		(0.212)	(0.224)
Partisanship			-0.270*
			(0.110)
Political interest			-0.101*
			(0.047)
State dummies	Included	Included	Included
Observations	2,404	2,331	2,178

Note: Ordered logistic regression models; cutoff reports are suppressed in the report; * p<0.05, ** p<0.01. The predicted probabilities in Figure 1 of the body are computed using coefficients in Model 3.

B Analysis of Afro Barometer Data (Wave 5)

B.1 Variable measurement

Belief of vote choice being monitored: "How likely do you think it is that powerful people can find out how you voted, even though there is supposed to be a secret ballot in this country?" 0=Not at all likely, 1=Not very likely, 2=Somewhat likely, 3=Very likely.

Frequency of private transfers being offered: "During the last national election in [20xx], how often, if ever did a candidate or someone from a political party offer you something, like food or a gift or money, in return for your vote?" 0=Never, 1=Once or twice, 2=A few times, 3=Often.

Poverty: Constructed as the average of responses to the following five questions, scaled between 0 and 1; "Over the past year, how often, if ever, have you or anyone in your family gone without: Enough food to eat?"; "∼Enough clean water for home use?"; "∼Medicines or medical treatment?"; "∼Enough fuel to cook your food?"; "∼A cash income?" 0=Never, 1=Just once or twice, 2=Several times, 3=Many times, 4=Always.

Age: "How old are you?"

Female: "Respondent's gender" 0=Male, 1=Female.

Education: "What is the highest level of education you have completed?" 0=No formal schooling, 1=Informal schooling only (including Koranic schooling), 2=Some primary schooling, 3=Primary school completed, 4=Some secondary school/ high school, 5=Secondary school completed/high school completed, 6=Post-secondary qualifications, other than university e.g. a diploma or degree from polytechnic or college, 7=Some university, 8=University completed, 9=Post-graduate.

Employment status: "Do you have a job that pays a cash income? If yes, is it full-time or part-time? If no, are you presently looking for a job?" 0=No (not looking), 1=No (looking), 2=Yes, part time, 3= Yes, full time.

Urban: Urban or rural primary sampling unit (answered by interviewer). 0=Rural, 1=Urban.

Evaluation of the country's democracy: "In your opinion how much of a democracy is the country today?" 0=Not a democracy, 1=A democracy, with major problems, 2=A democracy, but with minor problems, 3=A full democracy.

Turnout in the recent election: "With regard to the most recent national election in [20xx], which statement is true for you?" 0=You were not registered to vote, 1=You voted in the elections, 2=You decided not to vote, 3=You could not find the polling station, 4=You were prevented from voting, 5=You did not have time to vote, 6= You did not vote because you could not find your name in the voters' register, 7=Did not vote for some other reason, 8= You were too young to vote; recoded as 1 if 1 is chosen and 0 otherwise.

Participation in electoral campaign: "Thinking about the last national election in [20xx], did you: Attend a campaign meeting or rally?" 0=No, 1=Yes.

Contact with party: "During the past year, how often have you contacted any of the following persons about some important problem or to give them your views: A political party official?" 0=Never, 1=Only once, 2=A few times, 3=Often.

Partisanship: "Do you feel close to any particular political party?" 0=No, 1=Yes.

B.2 Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Max
Belief of vote choice being monitored	48,229	0.614	0.948	0	3
Frequency of private transfers being offered	50,536	0.275	0.707	0	3
Poverty	50,923	0.311	0.236	0	1
Age	51,143	37.192	14.594	18	105
Female	51,587	0.500	0.500	0	1
Education	51,461	3.272	2.133	0	9
Employment	51,378	0.332	0.471	0	1
Urban	50,900	0.391	0.488	0	1
Evaluation of the country's democracy	48,104	1.654	0.920	0	3
Turnout	51,389	0.730	0.444	0	1
Participation in electoral campaign	51,394	0.390	0.488	0	1
Contact with party	51,152	0.256	0.694	0	3
Partisanship	47,305	0.595	0.491	0	1

Note: 33 African countries are included

B.3 Regression results: vote buying offers and beliefs about ballot secrecy

	Dependent variable:		
	Belief of vote choice being monitored		
	(1)	(2)	(3)
Frequency of private transfers being offered	0.211**	0.201**	0.185**
	(0.013)	(0.014)	(0.015)
Poverty		0.602**	0.560**
		(0.048)	(0.052)
Age		-0.002**	-0.0005
		(0.001)	(0.001)
Female		0.019	0.037
		(0.020)	(0.022)
Education		0.019**	0.006
		(0.006)	(0.006)
Employment		0.012	0.021
		(0.022)	(0.024)
Urban		-0.010	-0.025
		(0.022)	(0.024)
Evaluation of the country's democracy			-0.155**
			(0.013)
Turnout			-0.246**
			(0.026)
Participation in electoral campaign			-0.002
			(0.025)
Contact with party			0.095**
			(0.015)
Partisanship			-0.008
			(0.024)
Country dummies	Included	Included	Included
Observations	47,443	45,741	40,155

Note: Ordered logistic regression models; cutoff reports are suppressed in the report; * p<0.05, ** p<0.01. The predicted probabilities in Figure 1 of the body are computed using coefficients in Model 3

B.4 Regression results: vote buying and other attitudes (perceived corruption and political trust)

	Dependent variable: XXX is/are involved in corruption					
	President	Parliament	Gov. officials	Police	Tax officials	Judge
	(1)	(2)	(3)	(4)	(5)	(6)
Frequency of private transfers being offered	0.126**	0.131**	0.185**	0.157**	0.187**	0.206**
	(0.015)	(0.015)	(0.014)	(0.014)	(0.014)	(0.015)
Poverty	0.744**	0.604**	0.576**	0.516**	0.499**	0.544**
	(0.050)	(0.050)	(0.049)	(0.047)	(0.049)	(0.049)
Age	−0.003**	−0.003**	−0.002*	−0.003**	−0.002**	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Female	−0.050*	−0.028	−0.056**	−0.069**	−0.049*	−0.048*
	(0.021)	(0.021)	(0.020)	(0.020)	(0.020)	(0.021)
Education	0.066**	0.037**	0.056**	0.053**	0.045**	0.044**
	(0.006)	(0.006)	(0.006)	(0.005)	(0.006)	(0.006)
Employment	0.055*	0.110**	0.110**	0.084**	0.081**	0.098**
	(0.023)	(0.023)	(0.022)	(0.021)	(0.022)	(0.022)
Urban	0.178**	0.190**	0.158**	0.208**	0.198**	0.120**
	(0.023)	(0.023)	(0.022)	(0.021)	(0.022)	(0.022)
Evaluation of the country's democracy	−0.491**	−0.345**	−0.349**	−0.279**	−0.281**	−0.265**
	(0.013)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Turnout	−0.123**	−0.101**	−0.086**	−0.073**	−0.100**	−0.120**
	(0.026)	(0.025)	(0.025)	(0.024)	(0.025)	(0.025)
Participation in electoral campaign	−0.019	−0.014	0.017	0.039	0.021	0.032
	(0.023)	(0.023)	(0.023)	(0.022)	(0.023)	(0.023)
Contact with party	0.014	−0.023	−0.014	−0.021	−0.024	−0.016
	(0.015)	(0.015)	(0.014)	(0.014)	(0.014)	(0.014)
Partisanship	−0.108**	−0.122**	−0.103**	−0.049*	−0.006	−0.035
	(0.023)	(0.023)	(0.022)	(0.021)	(0.022)	(0.022)
Country dummies	Included	Included	Included	Included	Included	Included
Observations	35,869	37,052	38,349	39,353	36,835	37,415

Note: Ordered logistic regression models; cutoff reports are suppressed in the report; * p<0.05, ** p<0.01; responses to Q60A, Q60B, Q60C, Q60E, Q60F, and Q60G are analyzed.

	Dependent variable: Trust					
	President	Parliament	Electoral commission	Tax officials	Police	Court
	(1)	(2)	(3)	(4)	(5)	(6)
Frequency of private transfers being offered	−0.153**	−0.123**	−0.126**	−0.114**	−0.123**	−0.128**
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Poverty	−0.370**	−0.384**	−0.507**	−0.550**	−0.425**	−0.413**
	(0.046)	(0.046)	(0.047)	(0.047)	(0.045)	(0.046)
Age	0.005**	0.002**	0.003**	0.002**	0.004**	0.0001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Female	−0.077**	−0.060**	−0.082**	−0.058**	−0.001	−0.041*
	(0.019)	(0.019)	(0.020)	(0.019)	(0.019)	(0.019)
Education	−0.077**	−0.061**	−0.059**	−0.035**	−0.068**	−0.054**
	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)
Employment	0.035	−0.008	0.001	−0.005	−0.054**	−0.067**
	(0.021)	(0.021)	(0.021)	(0.021)	(0.020)	(0.021)
Urban	−0.230**	−0.263**	−0.253**	−0.203**	−0.304**	−0.184**
	(0.021)	(0.021)	(0.021)	(0.021)	(0.020)	(0.021)
Evaluation of the country's democracy	0.663**	0.519**	0.575**	0.447**	0.417**	0.406**
	(0.012)	(0.011)	(0.012)	(0.012)	(0.011)	(0.011)
Turnout	0.208**	0.140**	0.192**	0.125**	0.038	0.091**
	(0.023)	(0.023)	(0.024)	(0.024)	(0.023)	(0.023)
Participation in electoral campaign	0.053*	0.061**	0.090**	0.050*	0.023	0.089**
	(0.022)	(0.021)	(0.022)	(0.022)	(0.021)	(0.021)
Contact with party	0.018	0.055**	0.043**	0.033*	0.052**	0.023
	(0.014)	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)
Partisanship	0.247**	0.270**	0.242**	0.168**	0.136**	0.154**
	(0.021)	(0.021)	(0.021)	(0.021)	(0.020)	(0.021)
Country dummies	Included	Included	Included	Included	Included	Included
Observations	41,055	40,108	37,463	38,447	41,512	40,703

Note: Ordered logistic regression models; cutoff reports are suppressed in the report; * p<0.05, ** p<0.01; responses to Q59A, Q59B, Q59C, Q59D, Q59F, and Q59J are analyzed.

C Mexico Survey Experiment

C.1 Exact wording of experimental vignettes and question (in Spanish)

[Baseline] Vamos a imaginarnos otra situación. Supongamos que va a haber una elección para la Cámara de Diputados y usted apoya a uno de los dos candidatos principales de su distrito. El operador electoral (de los a veces llamados "mapaches" electorales) que trabaja para el rival de su candidato no le ofrece ningún tipo de bienes materiales (regalos, dinero, etc.).

[Manipulation] Vamos a imaginarnos otra situación. Supongamos que va a haber una elección para la Cámara de Diputados y usted apoya a uno de los dos candidatos principales de su distrito. El operador electoral (de los a veces llamados "mapaches" electorales) que trabaja para el rival de su candidato le ofrece algunos bienes materiales (regalos, dinero, etc.).

Question: *Si el operador electoral (el "mapache") quisiera saber por quién votó usted ¿qué tan probable es que pueda descubrirlo? Nada probable/Poco probable/Algo probable/Muy probable*

C.2 Variable measurement

Belief of vote being monitored: "If the broker wanted to find out who you voted for, how likely is it that he can actually find out?" 0=Not at all, 1=A little likely, 2=Somewhat likely, 3=Very likely.

Age: "How old are you?"

Male: "What is your gender?" 0=Female, 1=Male.

Education: "What is your final education level?" 0=Never studied at a formal institution, 1=Elementary school, 2=Middle school, 3=High school, 4=Undergraduate degree, 5=Graduate degree.

Income: "What is your family's monthly income? (in Mexican pesos)" 1=Less than 2700, 2=2701 to 4100, 3=4101 to 5300, 4=5301 to 6600, 5=6601 to 8100, 6=8101 to 10000, 7=10001 to 12500, 8=12501 to 16600, 9=16601 to 30000, 10=More than 30000.

Any religion: "What is your religion? 0=No religion, 1=Catholic, 2=Evangelic, Christian not Catholic, 3=Pentecostal Church, 4=Seventh Day Adventist, 5=Mormon, 6=Jehovah Witness, 7=Other (Muslim, Jewish, etc.); recoded as 0 if 0 is chosen and 1 otherwise.

Employment status: "What type of job do you have?" 0=No job, 1=Part-time, 2=Full-time, 3=Retired; recoded as 1 if 1 or 2 is chosen and 0 otherwise.

Positive reciprocity: "Imagine the following situation: you are shopping in an unfamiliar city and realize you lost your way. You ask a stranger for directions. The stranger offers to take you with their car to your destination. The ride takes about 30 minutes and costs the stranger about 100 Mexican Peso in total. The stranger does not want money for it. You carry six bottles of beer, each of which you bought at 20 Mexican Peso. You decide to give some of the bottles to the stranger as a thank-you gift. How many bottle are you willing to give?" 0=No bottle, 1=1 bottle, 2=2 bottles, 3=3 bottles, 4=4 bottles, 5=5 bottles, 6=6 bottles.

Negative reciprocity: "How willing are you to punish unpleasant behavior even if this results in some disadvantage to you?" 0=Not at all, 1=Slightly willing, 2=Somewhat willing, 3=Very willing.

Confidence in the impact of my vote: "Generally speaking, how confident are you that your vote will be respected and considered in the final outcome of the election?" 0=Not confident at all, 1=A little confident , 2=Somewhat confident, 3=Very confident.

Trust in electoral commission: "We are going to show you a list of institutions in Mexican society. Please tell us how much confidence you, yourself, have in each one: The Electoral Commission" 0=Very little, 1=Some, 2=Quite a lot, 3=A great deal.

Turnout in the 2018 election: "Now let's talk about the last federal elections in July 2018 for a while. Did you participate in the elections?" 0=I was not eligible to vote, so I could not participate in the elections, 1=I was eligible to vote but I did not participate in the elections, 2=I was eligible

to vote and I did participate in the elections; recoded as 1 if 2 is chosen and 0 otherwise.

Offered in the 2018 election: "Were you offered any material goods for your vote in the last elections of July?" 0=No, 1=Yes.

C.3 Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Max
Manipulation	1,043	0.501	0.500	0	1
Belief of vote choice being monitored	1,030	1.133	1.069	0	3
Age	1,043	39.348	11.737	18	76
Male	1,041	0.508	0.500	0	1
Education	1,043	2.704	0.721	0	4
Income	1,004	7.551	2.392	1	10
Any religion	1,027	0.794	0.405	0	1
Employment status	1,032	0.854	0.354	0	1
Positive reciprocity	1,034	3.888	1.852	0	6
Negative reciprocity	1,029	2.266	0.793	0	3
Confidence in the impact of my vote	1,031	1.831	0.921	0	3
Trust in electoral commission	1,037	1.344	0.960	0	3
Turnout in the 2018 election	1,033	0.894	0.307	0	1
Offered in the 2018 election	1,026	0.185	0.389	0	1

C.4 Balance check

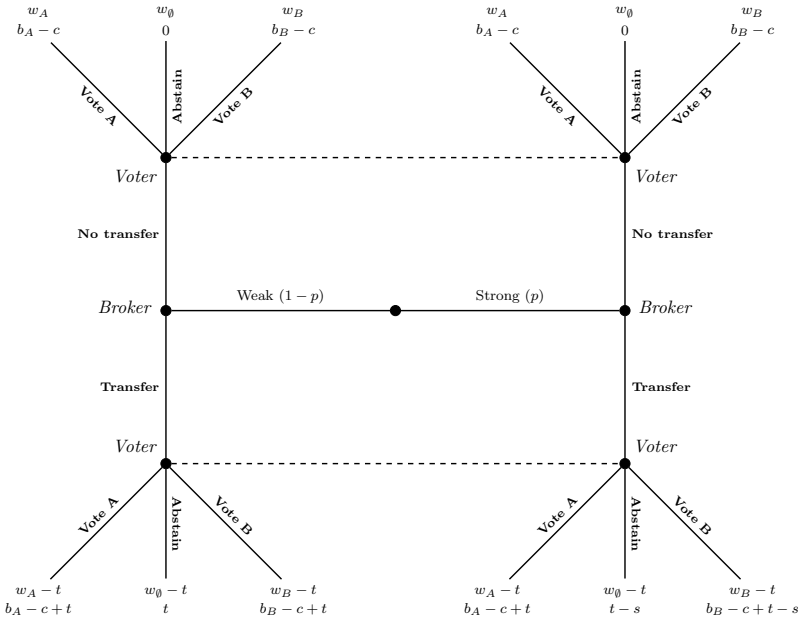
Variable	Control Mean	Manipulation Mean	Difference in Mean
Age	39.452	39.245	0.207
Male	0.486	0.531	-0.045
Education	3.677	3.730	-0.053
Income	7.572	7.530	0.042
Any religion	0.807	0.781	0.026
Employment status	0.855	0.853	0.002
Positive reciprocity	3.948	3.829	0.119
Negative reciprocity	2.277	2.255	0.022
Confidence in the impact of my vote	1.815	1.847	-0.033
Trust in electoral commission	1.291	1.398	-0.107
Turnout in the 2018 election	0.901	0.888	0.013
Offered in the 2018 election	0.196	0.175	0.021

Note: T-test used; * 0.05, ** 0.01; no statistically significant difference is detected

D Vote buying as a signaling game: proofs and other results

This is a dynamic game of incomplete information, and thus the solution concept we use is Perfect Bayesian equilibrium (henceforth equilibrium). Figure D.0.1 shows the game tree of the vote buying game. Because our goal is to illustrate how vote buying can undermine voter confidence in ballot secrecy, we focus on equilibria with vote buying, i.e., equilibria in which at least on type of candidate A offers a private transfer to the voter. We first describe the equilibrium strategies and beliefs of all equilibria with vote buying, and then present and discuss our main results, which provide necessary conditions for these equilibria to emerge.

Figure D.0.1: Game Tree



There are to two types of equilibria with vote buying. There is a *separating equilibrium* in which the strong type of candidate A offers a private transfer to the voter but the weak type does not. In this equilibrium, the voter casts his ballot for candidate A after he receives the private transfer, and either votes for candidate B or abstains otherwise (see Lemma 1). Notice that the players' strategies are such that vote buying is effective, that is, when given the private transfer the voter complies with his part of the vote-buying exchange. The reason for this is straightforward. If vote buying were not effective, then the strong type of candidate A would be better off not providing the transfer and keeping $t > 0$ for herself.

For the purposes of this paper, the most relevant feature of this equilibrium is that it is fully informative. This means that, upon observing candidate A's actions, V updates his beliefs about the effectiveness of A's clientelistic machine and, in fact, learns the candidate's type. Thus, after candidate A provides the private transfer, the voter believes he is dealing with the strong type with probability one. Similarly, after A does not offer the transfer, the voter believes A is the weak type with probability one.

There is also a *pooling equilibrium* in which both types of candidate A offer the transfer to the voter. The voter's strategy is such that he votes for candidate A after he receives the private transfer, and either votes for candidate B or abstains when he does not. Notice that V's strategy is identical to that in the separating equilibrium, and thus vote buying is effective in this equilibrium too. As explained above, this occurs because if vote buying were not effective, candidate A would be better off not providing the transfer.

Finally, we highlight that this equilibrium is not informative. Thus, after A provides the transfer, the voter believes he is dealing with the strong type with probability equal to his prior belief, $\mu_T = q$, and after candidate A does not offer the transfer, the voter believes A is the strong type with probability $\mu_N \in [0,1]$. Therefore, in contrast with the separating equilibrium, in the pooling equilibrium A's actions reveal no information about her type.

Throughout, we say the voter is a *strong supporter of* $i \in \{A,B\}$ if $b_i > c$. Recall we assumed $b_A = -b_B$. This implies that if the voter is a strong supporter of i, then he is not a strong supporter of $-i$. If the voter is neither a strong supporter of A nor a strong supporter of B, which implies $0 < b_i < c$ for $i \in \{A,B\}$, we say the voter is *moderate*. For simplicity, we assume $b_i \neq c$ for $i \in \{A,B\}$, which means the voter must be either a strong supporter of i or a moderate (i.e., these cases are exhaustive). Below, we denote strategies by σ, beliefs by μ, and histories by h. Before proving Proposition 1, we introduce two intermediate results.

Lemma 1. *In any equilibrium of the game, the voter's strategy is such that after all histories in which candidate A does not offer the private transfer is as follows: vote for i if he is a strong supporter of candidate i, and abstains otherwise.*

Proof. First, suppose the voter is a strong supporter of candidate $i \in \{A,B\}$. Then,

$$U_V(i|\sigma,\mu,h_N) = b_i - c > U_V(\emptyset|\sigma,\mu,h_N) = 0 > U_V(-i|\sigma,\mu,h_N) = b_{-i} - c$$

for all σ and all μ, where the first inequality holds because the voter is a strong supporter of i and the second from the fact that $b_i = -b_{-i}$. Therefore, if voter is a strong supporter of i, he votes for i after any history in which A does not offer the transfer.

Next, suppose the voter is not a strong supporter of candidate i. Then,

$$U_V(\emptyset|\sigma,\mu,h_N) = 0 > \max\{U_V(i|\sigma,\mu,h_N), U_V(-i|\sigma,\mu,h_N)\} = \max\{b_i - c, b_{-i} - c\}$$

for all σ and all μ, where the inequality holds from the fact that the voter is not a strong supporter of i and the fact that $b_i = -b_{-i}$. Therefore, if voter is not a strong supporter of i, he abstains after any history in which A does not offer the transfer. □

Let μ_{a_A} denote voter's belief that the candidate is the strong type after the candidate chooses a_A.

Lemma 2. *If the voter is a strong supporter of i, then voting for i strictly dominates abstention.*

Proof. Suppose the voter is a strong supporter of i. By Lemma 1, we only need to consider histories in which the voter does receive the transfer. Then,

$$\begin{aligned} U_V(i|\sigma,\mu,h_T) &\geq (1-\mu_T)(b_i - c + t) + \mu_T(b_i - c + t - s) = b_i - c + t - s\mu_T \\ U_V(\emptyset|\sigma,\mu,h_T) &= (1-\mu_T)(t) + \mu_T(t-s) = t - s\mu_T, \end{aligned}$$

and notice that $b_i > c$ implies $U_V(i|\sigma,\mu,h_T) > U_V(\emptyset|\sigma,\mu,h_T)$ for all μ_T. Therefore, if the voter is a strong supporter of i, voting for i strictly dominates abstention. □

Next, we restate and prove Proposition 1.

Proposition 1. *There exists a separating equilibrium with vote buying only if the following hold:*

(1) The voter is not a strong supporter of candidate A, i.e., $b_A \leq c$,

(2) The sanction from non-compliance is sufficiently high, i.e., $s \geq s^*$, and

(3) The private transfer is optimal for A, i.e., $t = t^*$,

where s^* and t^* are defined as follows

$$s^* \equiv \begin{cases} b_B - b_A & \text{if } b_B > c \\ c - b_A & \text{otherwise} \end{cases} \quad ; \quad t^* \equiv \begin{cases} w_B - w_A & \text{if } b_B > c \\ w_\emptyset - w_A & \text{otherwise} \end{cases}$$

Proof. Suppose (σ,μ) is a separating equilibrium in which the strong type of the candidate offers the private transfer and the weak type does not. Thus, σ is such that $\sigma_A(T|\text{Strong}) = \sigma_A(N|\text{Weak}) = 1$, and Bayesian updating implies $\mu_T = 1$ and $\mu_N = 0$. There are three cases.

Case 1: Voter is a strong supporter of A. By Lemma 1, we know $\sigma_V(A|h_N) = 1$. Therefore, for either type of the candidate, the expected payoff from not offering the transfer is w_A, which is strictly greater than the largest possible payoff from offering the transfer, $w_A - t$. This means that, in equilibrium, it must be that $\sigma_A(T|\text{Strong}) = \sigma_A(T|\text{Weak}) = 0$, which contradicts our initial assumption. Therefore, if the voter is a strong supporter of A, there cannot be a separating equilibrium. This implies condition *(1)*.

Case 2: Voter is a strong supporter of B. By Lemma 1, know $\sigma_V(B|h_N) = 1$. Therefore, for either type of the candidate, the expected payoff from not offering the transfer is w_B. Next, consider the voter's decision after she receives the transfer. By Lemma 2, voting for B strictly dominates abstention, so in equilibrium it must be that V either: (i) votes for B or (ii) votes for A.

Suppose (i) she votes for B. Then, the candidate's expected payoff from offering the transfer is $w_B - t$. This means the strong type of the candidate has a profitable deviation, contradicting the assumption that $\sigma_A(T|\text{Strong}) = 1$ is part of an equilibrium.

Suppose (ii) she votes for A, i.e., $\sigma_V(A|h_T) = 1$. For this to be the case, it must be that,

$$U_V(A|\sigma,\mu,h_T) = b_A - c + t > b_B - c + t - s = U_V(B|\sigma,\mu,h_T),$$

which simplifies to $s > b_B - b_A$. This implies the first part of condition *(2)*. Now, for either type of the candidate, the expected payoff from offering the transfer is $w_A - t$. For this to be an equilibrium, it must be that neither type of the candidate has a profitable deviation. For the strong type, this means $w_A - t \geq w_B$, and for the weak type, this means $w_B \geq w_A - t$. Therefore, it must be that $w_A - t = w_B$. This implies the first part of condition *(3)*.

Case 3: Voter is a moderate. By Lemma 1, know $\sigma_V(\emptyset|h_N) = 1$. Therefore, for either type of the candidate, the expected payoff from not offering the transfer is $w_\emptyset$. Next, consider the voter's

decision after she receives the transfer. In equilibrium, it must be that the V either: (i) does not for A or (ii) votes for A.

Suppose (i) she does not vote for A. Then, the candidate's expected payoff from offering the transfer is less or equal to $w_\emptyset - t$. This means the strong type of the candidate has a profitable deviation, contradicting the assumption that $\sigma_A(T|\text{Strong}) = 1$ is part of an equilibrium.

Suppose (ii) she votes for A, i.e., $\sigma_V(A|h_T) = 1$. For this to be the case, it must be that,

$$U_V(A|\sigma,\mu,h_T) = b_A - c + t > b_B - c + t - s = U_V(B|\sigma,\mu,h_T),$$

and

$$U_V(A|\sigma,\mu,h_T) = b_A - c + t > t - s = U_V(\emptyset|\sigma,\mu,h_T),$$

which simplifies to $s > c - b_A$, since the second inequality implies the first due to the fact that the voter is a moderate. This implies the remaining part of condition *(2)*. For this to be an equilibrium, it must be that neither type of the candidate has a profitable deviation. For the strong type, this means $w_A - t \geq w_\emptyset$, and for the weak type, this means $w_\emptyset \geq w_A - t$. Therefore, it must be that $w_A - t = w_\emptyset$. This implies the remaining part of condition *(3)*. □

Finally, the next result provides a set of necessary conditions for a pooling equilibrium with vote buying, i.e., an equilibrium in which both types of the candidate offer the transfer.

Proposition 2. *There exists a pooling equilibrium with vote buying only if the following conditions hold:*

(1) The voter is not a strong supporter of candidate A, i.e., $b_A \leq c$.

(2) The sanction from non-compliance is sufficiently high, i.e., $s \geq \frac{s^*}{q}$,

(3) The private transfer is not too large for A, i.e., $t \leq t^*$.

where s^* and t^* are as defined in Proposition 1.

Proof. Suppose (σ,μ) is a pool equilibrium in which both types of the candidate offer the transfer.. Thus, σ is such that $\sigma_A(T|\text{Strong}) = \sigma_A(T|\text{Weak}) = 1$, and Bayesian updating implies $\mu_T = q$. There are three cases.

Case 1: Voter is a strong supporter of A. This case is identical to the proof of Proposition 1. We conclude that, if the voter is a strong supporter of A, there cannot be a separating equilibrium. This implies condition *(1)*.

Case 2: Voter is a strong supporter of B. Lemma 1 implies $\sigma_V(B|h_N) = 1$. Therefore, for either type of the candidate, the expected payoff from not offering the transfer is w_B. Next, consider the voter's choice after she receives the transfer. Lemma 2 implies that in equilibrium V either (i) votes for B or (ii) votes for A.

Suppose (i) she votes for B. Then, the candidate's expected payoff from offering the transfer is $w_B - t$. This means the strong type of the candidate has a profitable deviation, contradicting the assumption that $\sigma_A(T|\text{Strong}) = 1$ is part of an equilibrium.

Suppose (ii) she votes for A, i.e., $\sigma_V(A|h_T) = 1$. For this to be the case, it must be that,

$$U_V(A|\sigma,\mu,h_T) = b_A - c + t > b_B - c + t - sq = U_V(B|\sigma,\mu,h_T),$$

which simplifies to $sq > b_B - b_A$. This implies the first part of condition *(2)*. Now, for either type of the candidate, the expected payoff from offering the transfer is $w_A - t$. For this to be an equilibrium, it must be that neither type of the candidate has a profitable deviation. For the strong type, this means $w_A - t \geq w_B$, and for the weak type, this means $w_B \geq w_A - t$. Therefore, it must be that $w_A - t = w_B$. This implies the first part of condition *(3)*.

Case 3: Voter is a moderate. Lemma 1 implies $\sigma_V(\emptyset|h_N) = 1$. Therefore, for either type of the candidate, the expected payoff from not offering the transfer is $w_\emptyset$. Next, consider the voter's decision after she receives the transfer. In equilibrium, it must be that the V either: (i) does not for A or (ii) votes for A.

Suppose (i) she does not vote for A. Then, the candidate's expected payoff from offering the transfer is less or equal to $w_\emptyset - t$. This means the strong type of the candidate has a profitable deviation. This means the strong type of the candidate has a profitable deviation, contradicting the assumption that $\sigma_A(T|\text{Strong}) = 1$ is part of an equilibrium.

Suppose (ii) she votes for A, i.e., $\sigma_V(A|h_T) = 1$. For this to be the case, it must be that,

$$U_V(A|\sigma,\mu,h_T) = b_A - c + t > b_B - c + t - sq = U_V(B|\sigma,\mu,h_T),$$

and

$$U_V(A|\sigma,\mu,h_T) = b_A - c + t > t - sq = U_V(\emptyset|\sigma,\mu,h_T),$$

which simplifies to $sq > c - b_A$, since the second inequality implies the first due to the fact that the voter is a moderate. This implies the remaining part of condition *(2)*. For this to be an equilibrium, it must be that neither type of the candidate has a profitable deviation. For the strong type, this means $w_A - t \geq w_\emptyset$, and for the weak type, this means $w_\emptyset \geq w_A - t$. Therefore, it must be that $w_A - t = w_\emptyset$. This implies the remaining part of condition *(3)*. □

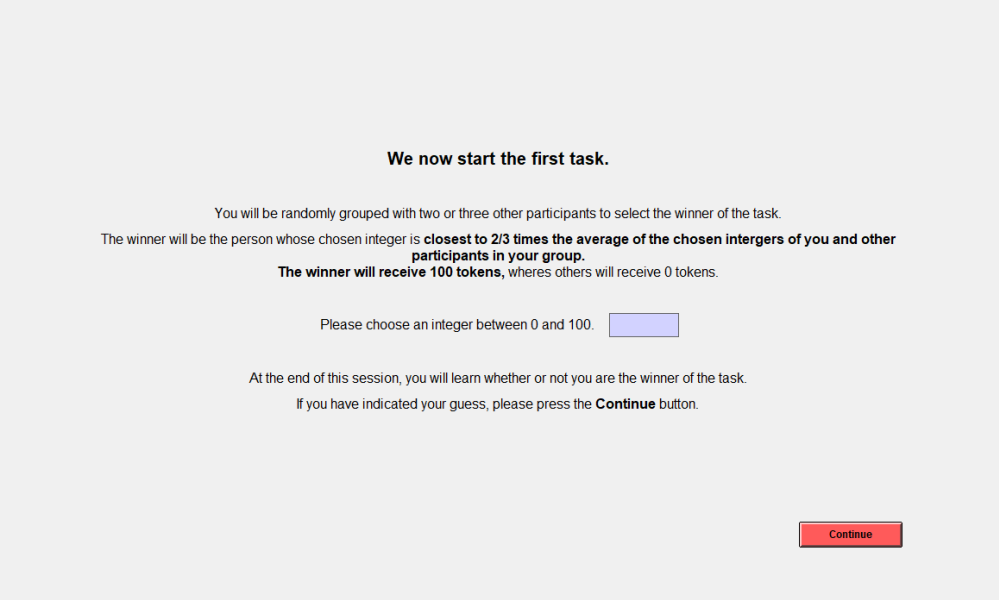
As can be seen, the conditions under which the separating and pooling equilibria emerge are similar. In fact, there is a set of parameters under which both types of equilibria can emerge. Condition (1) is identical in both propositions. This simply reflects the fact that candidate A would never buy a vote she is guaranteed to get, since doing wastes resources. Similarly, in both propositions, condition (3) caps the amount candidate A is willing to spend to buy V's vote.

One of the main substantive differences between the two equilibria with vote buying is captured by condition (2). As discussed above, in the pooling equilibrium, A's actions provide no information to the voter. After receiving the transfer, V still believes candidate A is the strong type with probabilty q. For vote buying to be effective in this case, the sanction s has to be large enough to compensate for the fact that he could be dealing with the weak type of candidate A (with probability $1-q$), and thus could renege without fear of punishment. Consistent with this intuition, condition (2) in Proposition 2 shows that the minimum sanction required for this equilibrium to emerge is inversely proportional to q. Therefore, as the voter's prior belief that A is the strong type (q) goes to zero, the sanction s would have to approach infinity for the pooling equilibrium to emerge. This stands in stark contrast with the separating equilibrium, which does not depend on the voter's prior beliefs, and can thus emerge even when q gets arbitrarily close to zero.

E Lab Experiment

E.1 Instructions

Task 1: Screen instructions for the p*-beauty contest*



Task 2: Paper instructions for the election game

General Instructions

1. This task concerns an election in which Citizen has to make a vote choice between Candidates A and B.

2. At Period 1, participants will be randomly divided into two groups - one for Candidate A and the other for Citizen –and they will be asked to play the task for six periods (from Period 1 to 6). After switching their roles (i.e., from Candidate A to Citizen or from Citizen to Candidate A) as Period 7 starts, participants will be asked to play the task for another six periods (from Period 7 to 12).

3. Participants will never be assigned to the role of Candidate B during the 12 periods.

4. At each period, there will be only one election. For the election, the computer will randomly and newly match two participants, one from the Candidate A group and one participant from the Citizen group. Participants will remain uninformed of the identity of their matched partners.

5. At every period, Candidate A will be newly endowed with 120 tokens and Citizen will be newly endowed with 40 tokens, independently of the election results at previous periods.

6. As each period starts, the computer will newly determine Candidate A's monitoring technology; Candidate A will be equipped with monitoring technology at a chance of 0.4, independently of previous periods. Below, monitoring technology is explained in detail.

7. Once the entire session is completed, the computer will randomly select one period to determine participants' earnings in Task 2. Earnings at the selected period will be counted as part of final earnings.

Election

1. Once an election starts at a period, Candidate A will be informed of whether or not she/he is equipped with monitoring technology. Then, Candidate A will be asked to make one decision regarding whether or not to offer a gift – 40 tokens – to Citizen.

2. If Candidate A chooses to offer a gift to Citizen, it will result in deducting 40 tokens from the Candidate A's endowment; the 40 tokens will be automatically added to the Citizen's endowment as her/his earnings.

3. After Candidate A's gift decision, Citizen will be informed of it before being asked to choose one of three options, which will affect the chance that the Candidate A wins the election. Yet, the Citizen will remain uninformed of whether or not the Candidate A is equipped with monitoring technology as the Citizen makes a vote choice.

4. The default chance of Candidate A's winning is 0.5 (i.e., Candidate B wins with a chance of 0.5), but the chance will increase to 0.6 if Citizen chooses voting for the Candidate A, whereas it will decrease to 0.4 if the Citizen chooses voting for Candidate B. The chance will remain same as 0.5 if the Citizen chooses abstention.

5. Voting for Candidate A and Voting for Candidate B are costly in the sense that they will result in deducting 10 tokens from Citizen's endowment. Abstention will not incur any cost to Citizen.

6. Candidate A will earn 200 tokens if she/he wins and 0 tokens if she/he loses.

7. Citizen will earn 0 tokens if Candidate A wins. However, Citizen will earn 120 tokens if Candida A loses (i.e., Candidate B wins).

Monitoring technology

1. Monitoring technology allows Candidate A to find out Citizen's vote choice.

2. However, its operation depends on whether or not Candidate A offered a gift to Citizen; Candidate A's monitoring technology will lead her/him to find out Citizen's vote choice only when she/he offered Citizen a gift.

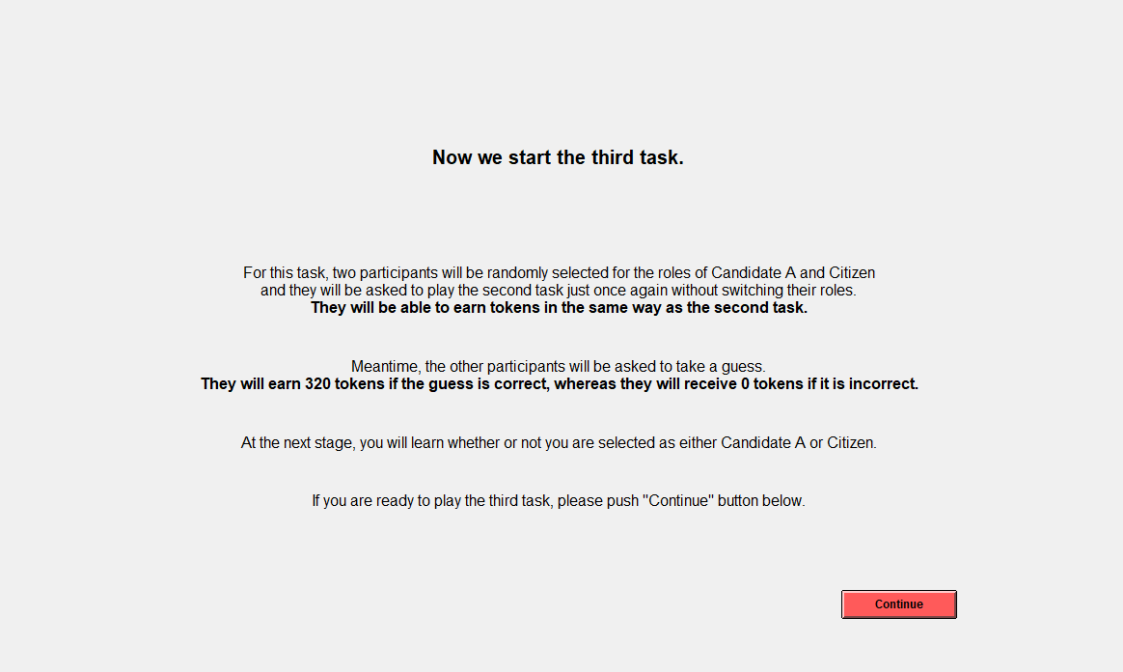
3. If Citizen receives a gift from Candidate A, the Citizen will be sanctioned (i.e., she/he will lose 40 tokens) when the Candidate A finds out that the Citizen voted for Candidate B or abstained; voting for Candidate B or abstention will not incur any sanction to Citizen as long as (i) the Citizen does not receive a gift from Candidate A or (ii) Candidate A offering a gift is not equipped with monitoring technology.

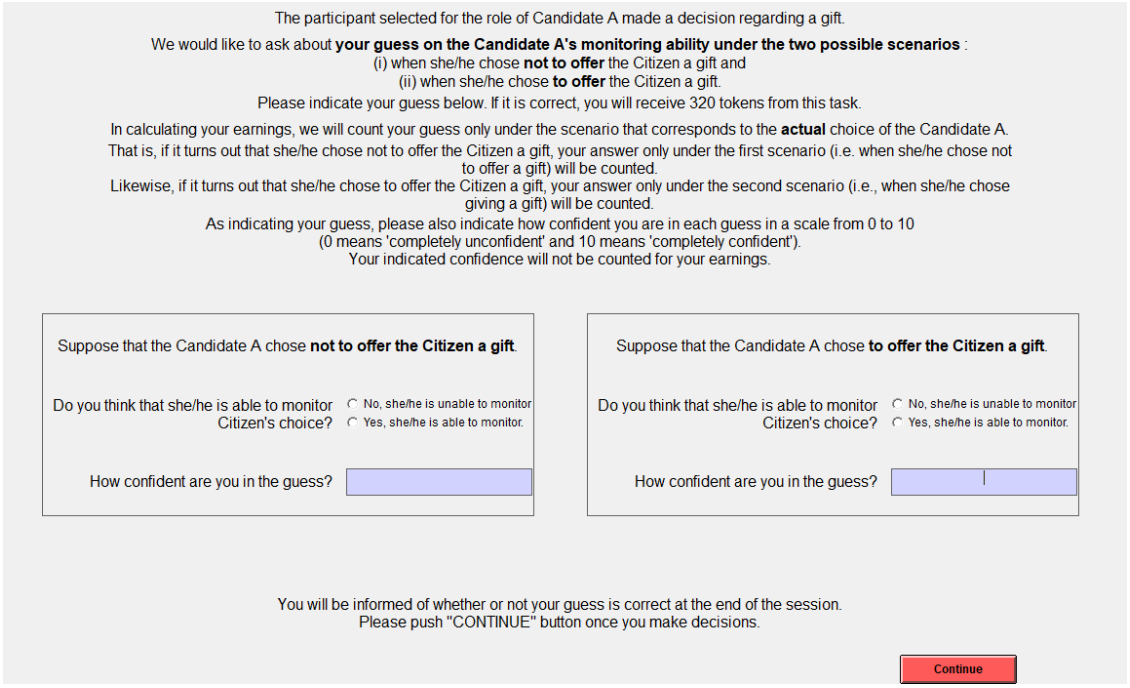
Feedback

1. At the end of each period, Candidate A and Citizen will receive a period report about the election result and their earnings. When Candidate A with monitoring technology offered Citizen a gift, the Candidate A will be further informed of Citizen's vote choice and whether or not the Citizen was sanctioned. Citizen will be informed of whether or not she/he was sanctioned.

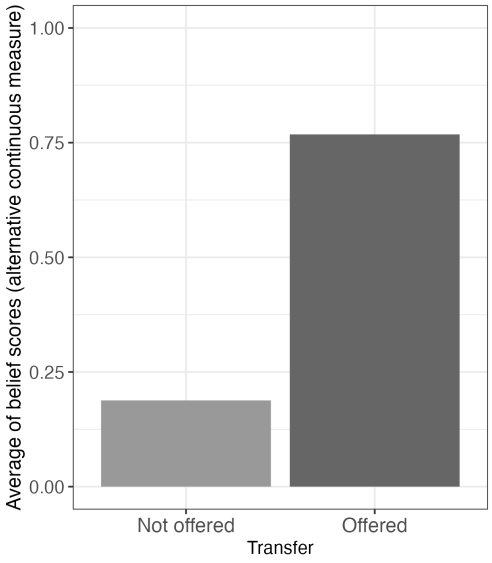
2. In addition, when Candidate A and Citizen are asked to make decisions, they will always find on their computer screen tables summarizing results at the previous periods.

Task 3: Screen instructions for the measurement of belief updating




The participant selected for the role of Candidate A made a decision regarding a gift.
We would like to ask about your guess on the Candidate A's monitoring ability under the two possible scenarios :
(i) when she/he chose not to offer the Citizen a gift and
(ii) when she/he chose to offer the Citizen a gift.
Please indicate your guess below. If it is correct, you will receive 320 tokens from this task.
In calculating your earnings, we will count your guess only under the scenario that corresponds to the actual choice of the Candidate A.
That is, if it turns out that she/he chose not to offer the Citizen a gift, your answer only under the first scenario (i.e. when she/he chose not to offer a gift) will be counted.
Likewise, if it turns out that she/he chose to offer the Citizen a gift, your answer only under the second scenario (i.e., when she/he chose giving a gift) will be counted.
As indicating your guess, please also indicate how confident you are in each guess in a scale from 0 to 10
(0 means 'completely unconfident' and 10 means 'completely confident').
Your indicated confidence will not be counted for your earnings.
Suppose that the Candidate A chose not to offer the Citizen a gift.
Do you think that she/he is able to monitor Citizen's choice?
No, she/he is unable to monitor
Yes, she/he is able to monitor.
How confident are you in the guess?
Suppose that the Candidate A chose to offer the Citizen a gift.
Do you think that she/he is able to monitor Citizen's choice?
No, she/he is unable to monitor
Yes, she/he is able to monitor.
How confident are you in the guess?
You will be informed of whether or not your guess is correct at the end of the session.
Please push "CONTINUE" button once you make decisions.
Continue

E.2 Alternative measure of beliefs along continuous scale



Note: The bars indicate the averages of belief scores about Clientelistic candidate's monitoring capacity according to the hypothetical scenario of private transfers

E.3 Variable measurement

Age: Survey question, "Age (in years)"

Female: Survey question, "What is your gender?" 0=Male; 1=Female.

Christian and *Muslim*: Survey question,"What best describes your religious affiliation?" 1= Christian - Protestant; 2= Christian - Catholic; 3= Christian - Other; 4=Jewish; 5= Muslim; 6= Buddhist; 7= Hindu; 8= Agnostic; 9=Atheist; 10=Other.

Choice in the beauty contest: Behavioral measure (Task 1), "You will be randomly grouped with two or three other participants to select the winner of the task. The winner will be the person whose integer is closest to 2/3 times the mean of the chosen integers of you and other participants in your group. The winner will receive 60 tokens, whereas tohers will receive 0 tokens. Please choose an integer between 0 and 100."

Num. of correct answers CRT: Survey question,"Below are several problems that vary in difficulty. Try to answer as many as you can. 1. A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost? (in cents); 2. If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets? (in minutes); 3. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake? (in days)"

Altruism: Survey question,"How do you assess your willingness to share with others without expecting anything in return when it comes to charity? Please use a scale from 0 to 6, where 0 means you are 'completely unwilling to share' and a 6 means you are 'very willing to share'. You can also use the values in- between to indicate where you fall on the scale."

Positive reciprocity: Survey question,"Imagine the following situation. You are shopping in an unfamiliar city and realize you lost your way. You ask a stranger for directions. The stranger offers to take you with their car to your destination. The ride takes about 20 minutes and costs the stranger about $20 in total. The stranger does not want money for it. You carry six bottles of wine with you. The cheapest bottle costs $5, the most expensive one $30. You decide to give one of the bottles to the stranger as a thank-you gift. Which bottle do you give?" 1=$5 bottle; 2=$10 bottle; 3=$15 bottle; 4=$20 bottle; 5=$25 bottle; 6=$30 bottle.

E.4 Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Max
Age	70	20.643	1.694	18	25
Female	70	0.543	0.502	0	1
Christian	70	0.329	0.473	0	1
Muslim	70	0.171	0.380	0	1
Choice in beauty contest	70	43.086	21.583	2	100
Num. of correct answers in the CRT	70	1.800	1.111	0	3
Altruism	70	4.257	1.337	1	6
Positive reciprocity	70	3.971	1.262	1	6

E.5 Replication of Models 4-6 in Table 2 of the body

	Dependent variable:		
	Alternative measure of continuous belief ($0 \sim 1$)		
	(1)	(2)	(3)
Hypothetical scenario of transfer provision	0.580**	0.580**	0.580**
	(0.050)	(0.050)	(0.050)
Role in the first six rounds	0.047	0.049	0.068
	(0.051)	(0.055)	(0.062)
Age		0.002	0.0004
		(0.015)	(0.016)
Female		-0.026	-0.017
		(0.046)	(0.048)
Christian		0.065	0.090
		(0.056)	(0.067)
Muslim		0.097	0.129
		(0.082)	(0.079)
Choice in the beauty contest			0.00004
			(0.001)
Num. of correct answers in the CRT			0.020
			(0.031)
Altruism			-0.010
			(0.020)
Positive reciprocity			-0.024
			(0.018)
Observations	120	120	120

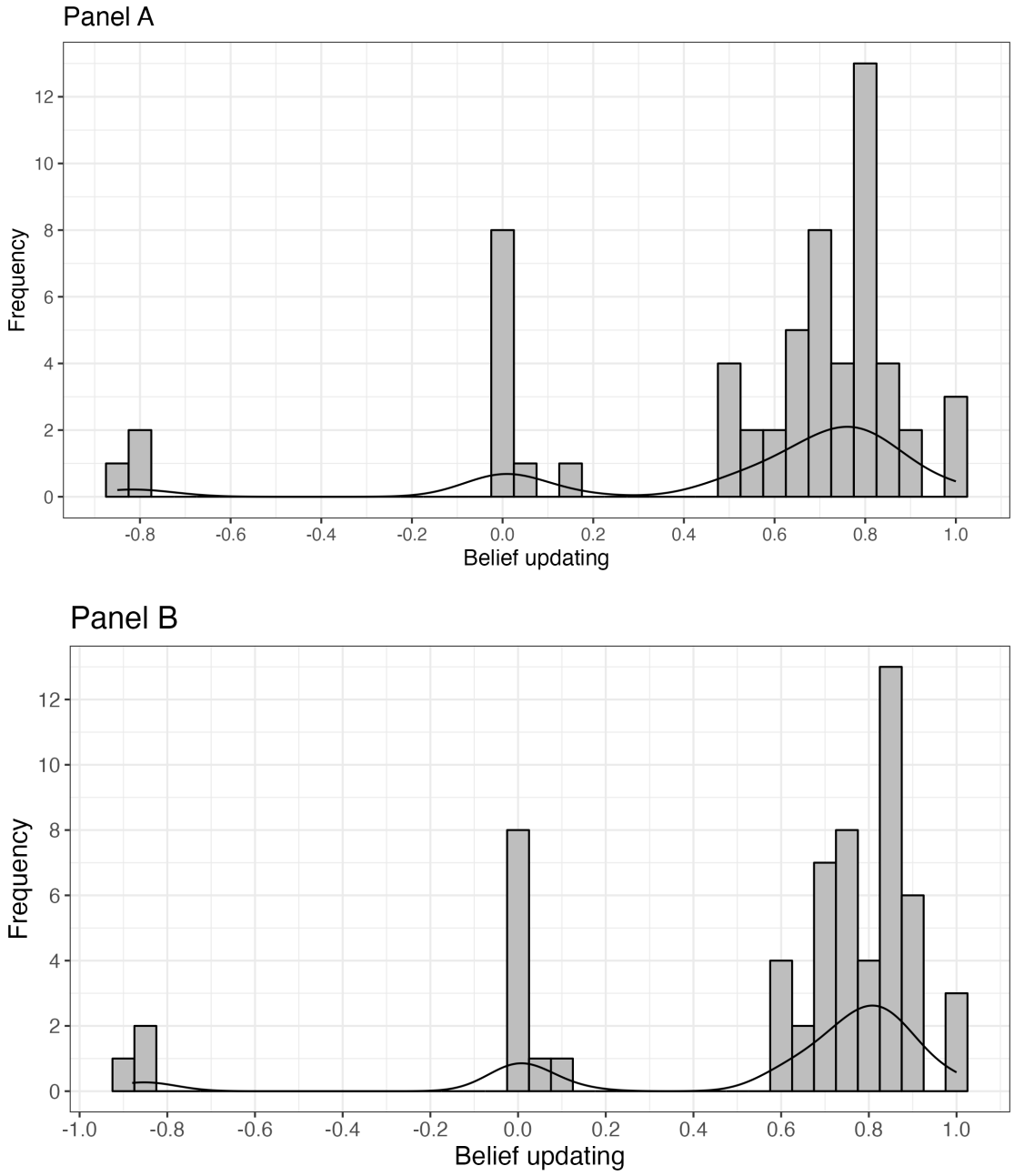
Note: All models use OLS regressions; standard errors, clustered at the individual level, in parentheses; cutoff and constant are suppressed in the report; * p<0.05, ** p<0.01

E.6 Replication of Models 1-3 in Table 3 of the body using random-effects multinomial logistic regressions

	(1) model1	(2) model2	(3) model3
Voting for the programmatic candidate			
Private transfer offered	-1.352**	-1.192*	-1.208*
	(0.480)	(0.480)	(0.484)
Role in the first six rounds	-0.238	-0.334	-0.285
	(0.772)	(0.681)	(0.697)
Age		-0.198	-0.218
		(0.209)	(0.209)
Female		-3.029**	-2.843**
		(0.740)	(0.749)
Christian		-1.189	-0.932
		(0.753)	(0.797)
Muslim		-2.475**	-2.328*
		(0.933)	(0.956)
Choice in the beauty contest			-0.000
			(0.015)
Num. of correct answers in the CRT			0.474
			(0.326)
Altruism			0.132
			(0.268)
Positive reciprocity			0.014
			(0.283)
Baseline: Abstestion			
Voting for the clientelistic candidate			
Private transfer offered	4.495**	4.468**	4.512**
	(0.734)	(0.735)	(0.736)
Role in the first six rounds	-0.910	-1.056	-1.276
	(0.880)	(0.877)	(0.879)
Age		-0.327	-0.254
		(0.265)	(0.253)
Female		-1.349	-0.962
		(0.908)	(0.921)
Christian		-1.219	-1.684
		(0.969)	(0.998)
Muslim		-1.720	-1.549
		(1.180)	(1.176)
Choice in the beauty contest			-0.031
			(0.020)
Num. of correct answers in the CRT			-0.075
			(0.398)
Altruism			-0.134
			(0.333)
Positive reciprocity			0.491
			(0.358)
Observations	420	420	420

Note: All models use random-effects logit regressions; standard errors in parentheses; abstention is the baseline; constants are suppressed in the report; * p<0.05, ** p<0.01

E.7 Distributions of belief updaing



Note: The bars indicate the numbers of participants according to belief-updating scores; the curves are density graphs; Panels A and B assume that the chance of choosing the option 'Yes, she/he is able to monitor' is 0.5 and 0.4, respectively, when participants are completely uncertain

E.8 Mechanisms: the informational effects of vote buying

	Dependent variable:	
	Vote choice (-1/0/1)	Transfer offer (0/1)
	(1)	(2)
Belief-updating score	0.168	-1.892
	(0.774)	(1.089)
Private transfer offered	3.096**	
	(0.467)	
Belief-updating score × Private transfer offered	1.248*	
	(0.625)	
Monitoring capacity		0.105
		(0.606)
Belief-updating score × Monitoring capacity		3.615**
		(0.953)
Role in the first six rounds	-0.180	-0.521
	(0.580)	(0.841)
Age	0.036	-0.418
	(0.171)	(0.251)
Female	1.911**	-0.156
	(0.621)	(0.865)
Christian	-0.410	0.188
	(0.673)	(0.929)
Muslim	1.040	-0.939
	(0.886)	(1.306)
Choice in the beauty contest	-0.012	-0.020
	(0.014)	(0.020)
Num. of correct answers in the CRT	-0.161	0.111
	(0.269)	(0.383)
Altruism	-0.053	0.155
	(0.217)	(0.308)
Positive reciprocity	0.355	0.313
	(0.240)	(0.336)
Round	0.072	-0.588**
	(0.081)	(0.117)
Participant random effects :		
Variance	3.206	6.892
	(1.791)	(2.625)
Observations	360	360

Note: Models 1 and 2 use random effect regressions (ologit for Model 1 and logit for Model 2); standard errors in parentheses; cutoffs are suppressed in the report; * $p<0.05$, ** $p<0.01$

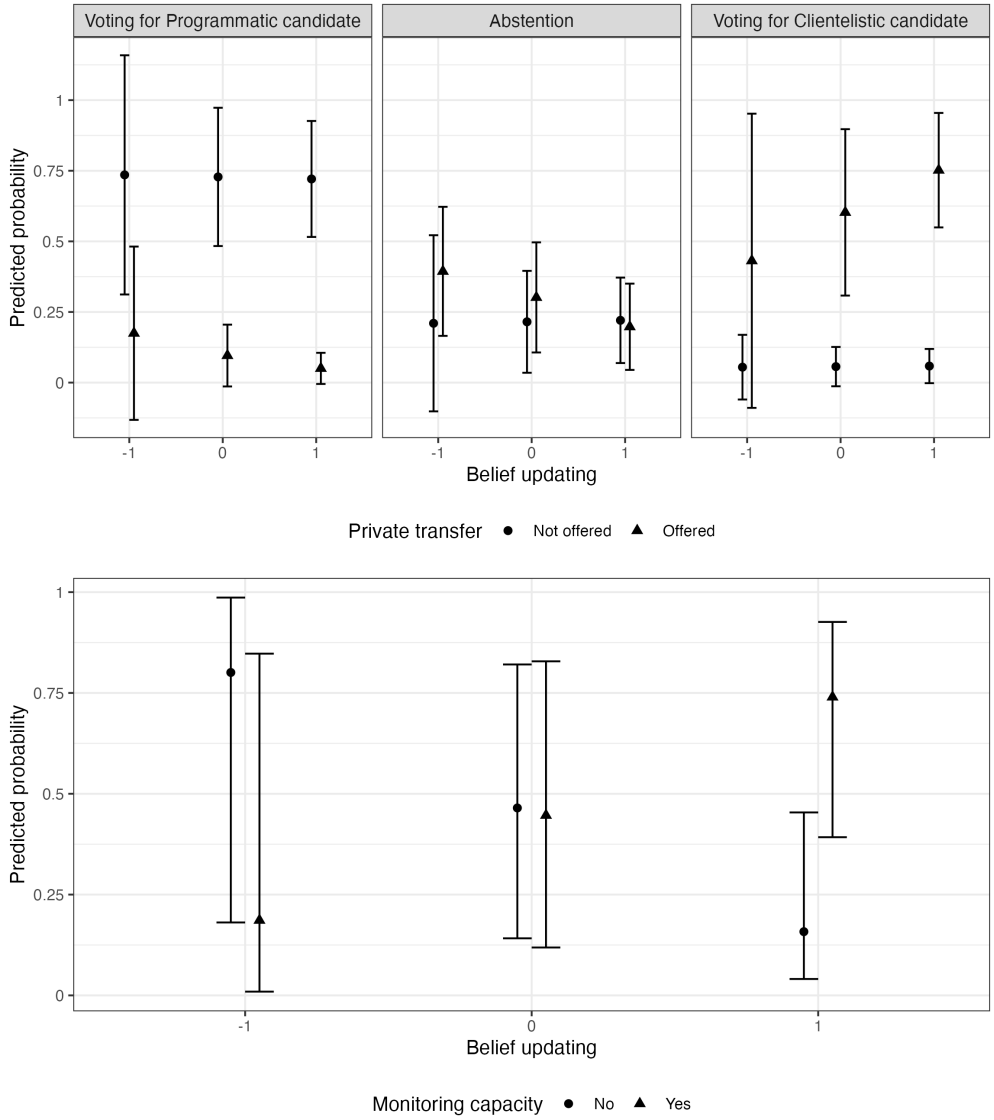
E.9 Replication of key results (Section E.8) with the binary measure of a belief

Table E.9.1: Regression results

	Dependent variable:			
	Vote choice (-1/0/1)		Transfer offer (0/1)	
	(1)	(2)	(3)	(4)
Belief-updating score (binary measure)	0.380	0.036	-0.619	-1.532
	(0.532)	(0.595)	(0.712)	(0.815)
Private transfer offered	3.650**	3.231**		
	(0.387)	(0.487)		
Belief-updating score (binary measure)		0.657		
× Private transfer offered		(0.492)		
Monitoring capacity			2.004**	-0.074
			(0.383)	(0.639)
Belief-updating score (binary measure)				2.792**
× Monitoring capacity				(0.726)
Role in the first six rounds	-0.138	-0.158	-0.457	-0.546
	(0.567)	(0.578)	(0.759)	(0.825)
Age	0.026	0.022	-0.421	-0.425
	(0.166)	(0.169)	(0.226)	(0.246)
Female	1.785**	1.807**	-0.288	-0.204
	(0.600)	(0.613)	(0.776)	(0.844)
Christian	-0.438	-0.437	0.316	0.221
	(0.660)	(0.673)	(0.843)	(0.914)
Muslim	0.972	1.036	-0.841	-0.867
	(0.867)	(0.887)	(1.181)	(1.284)
Choice in the beauty contest	-0.009	-0.009	-0.015	-0.019
	(0.013)	(0.014)	(0.018)	(0.020)
Num. of correct answers in the CRT	-0.155	-0.156	0.133	0.121
	(0.264)	(0.268)	(0.348)	(0.376)
Altruism	-0.074	-0.068	0.222	0.170
	(0.212)	(0.216)	(0.278)	(0.302)
Positive reciprocity	0.300	0.308	0.263	0.275
	(0.230)	(0.235)	(0.298)	(0.325)
Round	0.064	0.067	-0.489**	-0.590**
	(0.080)	(0.080)	(0.104)	(0.116)
Participant random effects :				
Variance	3.036	3.190	5.531	6.612
	(1.742)	(1.786)	(2.352)	(2.571)
Observations	360	360	360	360

Note: Models 1 to 4 use random effect regressions (ologit for Models 1 and 2 and logit for Models 3 and 4); standard errors in parentheses; cutoffs are suppressed in the report; * p<0.05, ** p<0.01

Figure E.9.1: The predicted probabilities of vote choices and private transfer offers according to belief updating, using Models 2 and 4 in Table E.9.1



Note: Predicted probabilities in the upper and lower panels are computed using coefficients in Models 2 and 4 of the previous table, respectively; dots and vertical lines indicate predicted probabilities and 95% confidence intervals.

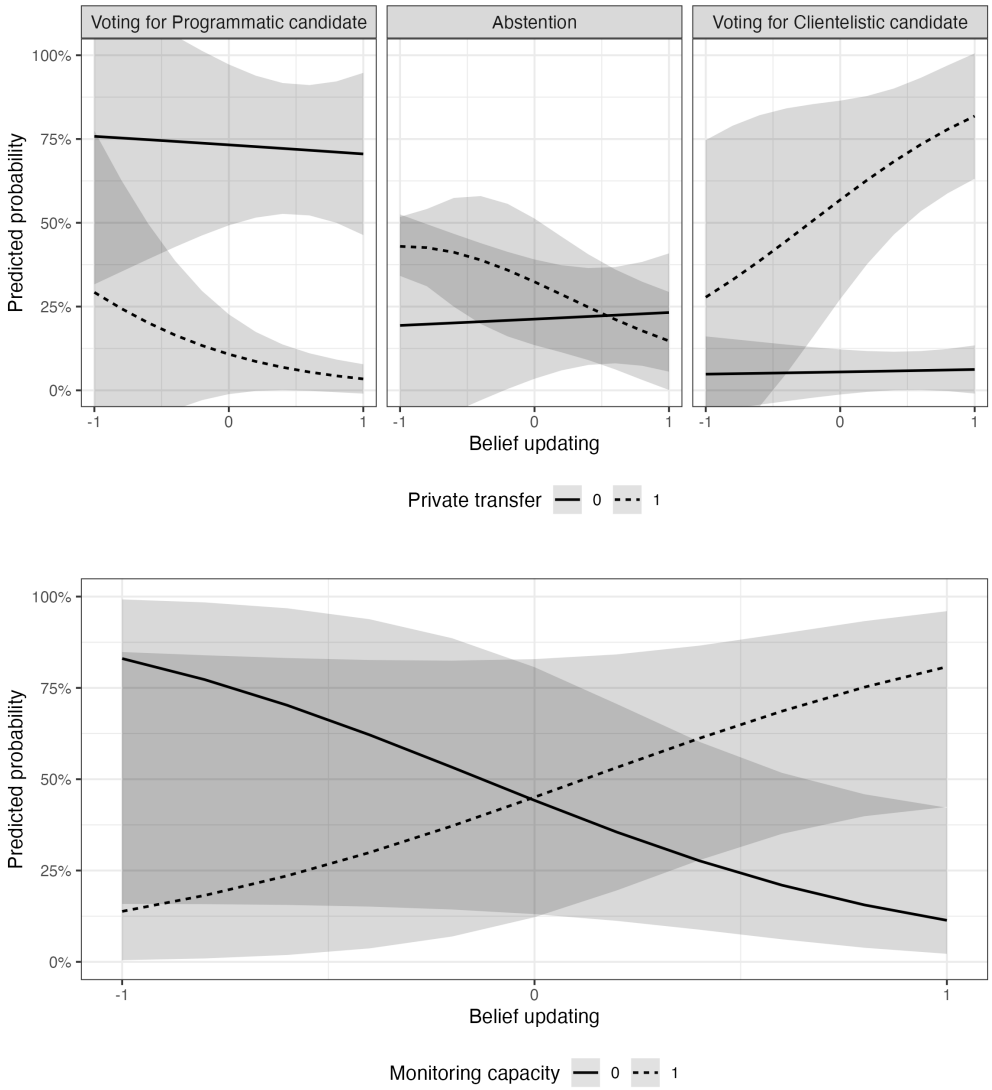
E.10 Replication of key results (Section E.8) with the alternative measure of a belief along a continuous scale

Table E.10.1: Regression results

	Dependent variable:			
	Vote choice (-1/0/1)		Transfer offer (0/1)	
	(1)	(2)	(3)	(4)
Belief-updating score (alternative measure)	0.703	0.134	-0.660	-1.821
	(0.661)	(0.734)	(0.884)	(1.028)
Private transfer offered	3.662**	3.121**		
	(0.387)	(0.472)		
Belief-updating score (alternative measure)		1.096		
× Private transfer offered		(0.594)		
Monitoring capacity			2.000**	0.036
			(0.383)	(0.619)
Belief-updating score (alternative measure)				3.454**
× Monitoring capacity				(0.904)
Role in the first six rounds	-0.129	-0.173	-0.461	-0.527
	(0.565)	(0.580)	(0.760)	(0.837)
Age	0.042	0.033	-0.419	-0.419
	(0.166)	(0.171)	(0.227)	(0.250)
Female	1.840**	1.885**	-0.282	-0.167
	(0.603)	(0.620)	(0.781)	(0.861)
Christian	-0.417	-0.415	0.338	0.195
	(0.658)	(0.674)	(0.843)	(0.926)
Muslim	0.947	1.045	-0.779	-0.920
	(0.862)	(0.887)	(1.178)	(1.301)
Choice in the beauty contest	-0.010	-0.011	-0.015	-0.020
	(0.013)	(0.014)	(0.018)	(0.020)
Num. of correct answers in the CRT	-0.156	-0.159	0.135	0.113
	(0.263)	(0.269)	(0.348)	(0.381)
Altruism	-0.070	-0.058	0.216	0.158
	(0.212)	(0.217)	(0.278)	(0.307)
Positive reciprocity	0.327	0.342	0.256	0.304
	(0.232)	(0.239)	(0.302)	(0.334)
Round	0.065	0.070	-0.489**	-0.590**
	(0.080)	(0.081)	(0.104)	(0.117)
Participant random effects :				
Variance	3.017	3.208	5.554	6.832
	(1.737)	(1.791)	(2.357)	(2.614)
Observations	360	360	360	360

Note: Models 1 to 4 use random effect regressions (ologit for Models 1 and 2 and logit for Models 3 and 4); coefficients are non-exponentiated; standard errors in parentheses; cutoffs are suppressed in the report; * p<0.05, ** p<0.01

Figure E.10.1: The predicted probabilities of vote choices and private transfer offer according to belief updating (alternative measure of a belief along a continuous scale), using Models 2 and 4 in Table E.10.1



Note: Predicted probabilities in the upper and lower panels are computed using coefficients in Models 2 and 4 of the previous table, respectively; lines and grey areas indicate predicted probabilities and their 95% confidence intervals, respectively.

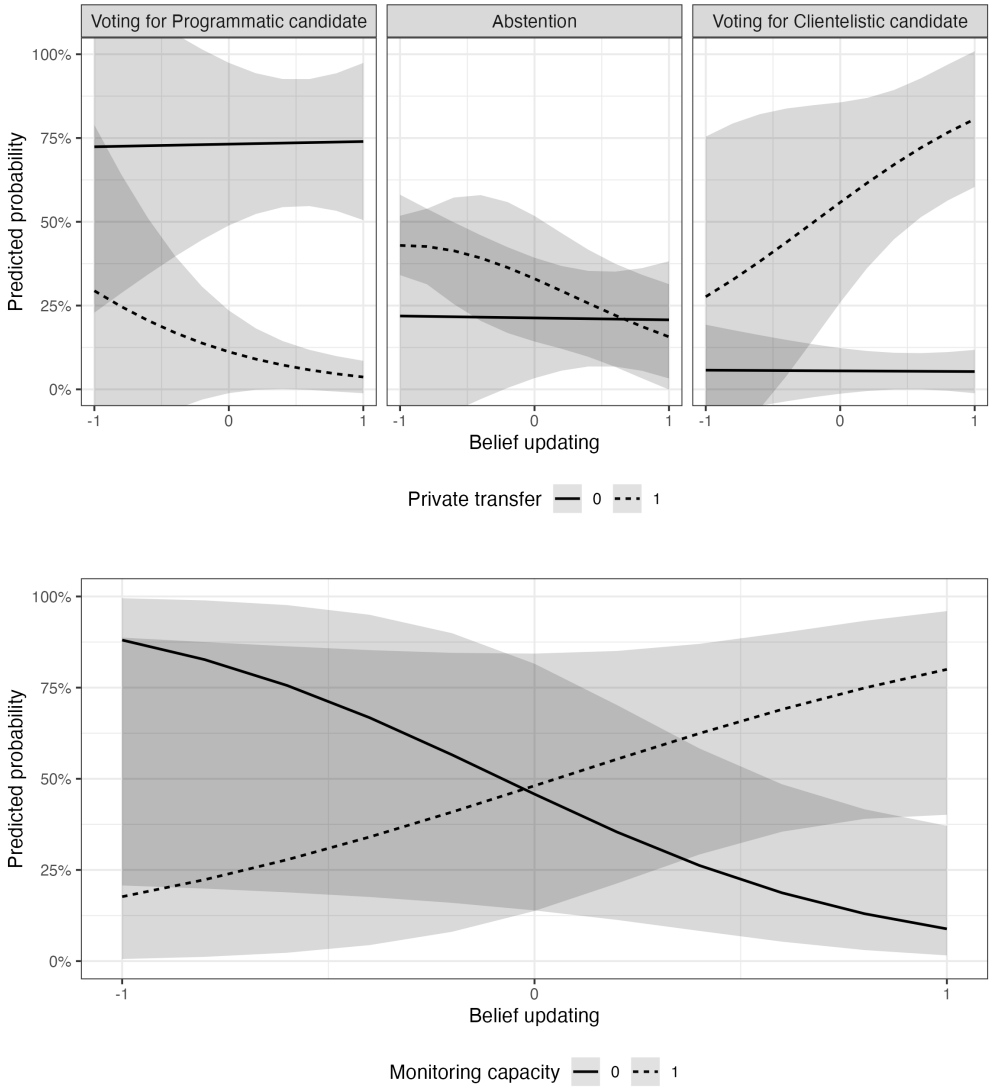
E.11 Replication of key results (Section E.8) excluding post-manipulation variables

Table E.11.1: Regression results

	Dependent variable:			
	Vote choice (-1/0/1)		Transfer offer (0/1)	
	(1)	(2)	(3)	(4)
Belief-updating score	0.614	-0.040	-0.884	-2.165*
	(0.689)	(0.770)	(0.918)	(1.078)
Private transfer offered	3.639**	3.074**		
	(0.387)	(0.467)		
Belief-updating score × Transfer offered		1.235*		
		(0.624)		
Monitoring capacity			1.989**	0.092
			(0.382)	(0.606)
Belief-updating score × Monitoring capacity				3.628**
				(0.951)
Role in the first six rounds	0.027	-0.015	-0.372	-0.408
	(0.559)	(0.574)	(0.737)	(0.812)
Age	-0.004	-0.017	-0.432	-0.443
	(0.166)	(0.170)	(0.225)	(0.249)
Female	1.850**	1.904**	-0.309	-0.205
	(0.607)	(0.625)	(0.778)	(0.857)
Christian	-0.150	-0.137	0.328	0.205
	(0.625)	(0.641)	(0.807)	(0.888)
Muslim	1.155	1.281	-0.591	-0.777
	(0.833)	(0.859)	(1.129)	(1.249)
Choice in the beauty contest	-0.009	-0.011	-0.016	-0.020
	(0.013)	(0.014)	(0.018)	(0.020)
Round	0.064	0.070	-0.488**	-0.586**
	(0.080)	(0.081)	(0.104)	(0.117)
Participant random effects :				
Variance	3.190	3.396	5.739	7.057
	(1.786)	(1.843)	(2.396)	(2.656)
Observations	360	360	360	360

Note: Models 1 to 4 use random effect regressions (ologit for Models 1 and 2 and logit for Models 3 and 4); standard errors in parentheses; cutoffs are suppressed in the report; * p<0.05, ** p<0.01

Figure E.11.1: The predicted probabilities of vote choices and private transfer offers according to belief updating, using Models 2 and 4 in Table E.11.1



Note: Predicted probabilities in the upper and lower panels are computed using coefficients in Models 2 and 4 of the previous table, respectively; lines and grey areas indicate predicted probabilities and their 95% confidence intervals, respectively.

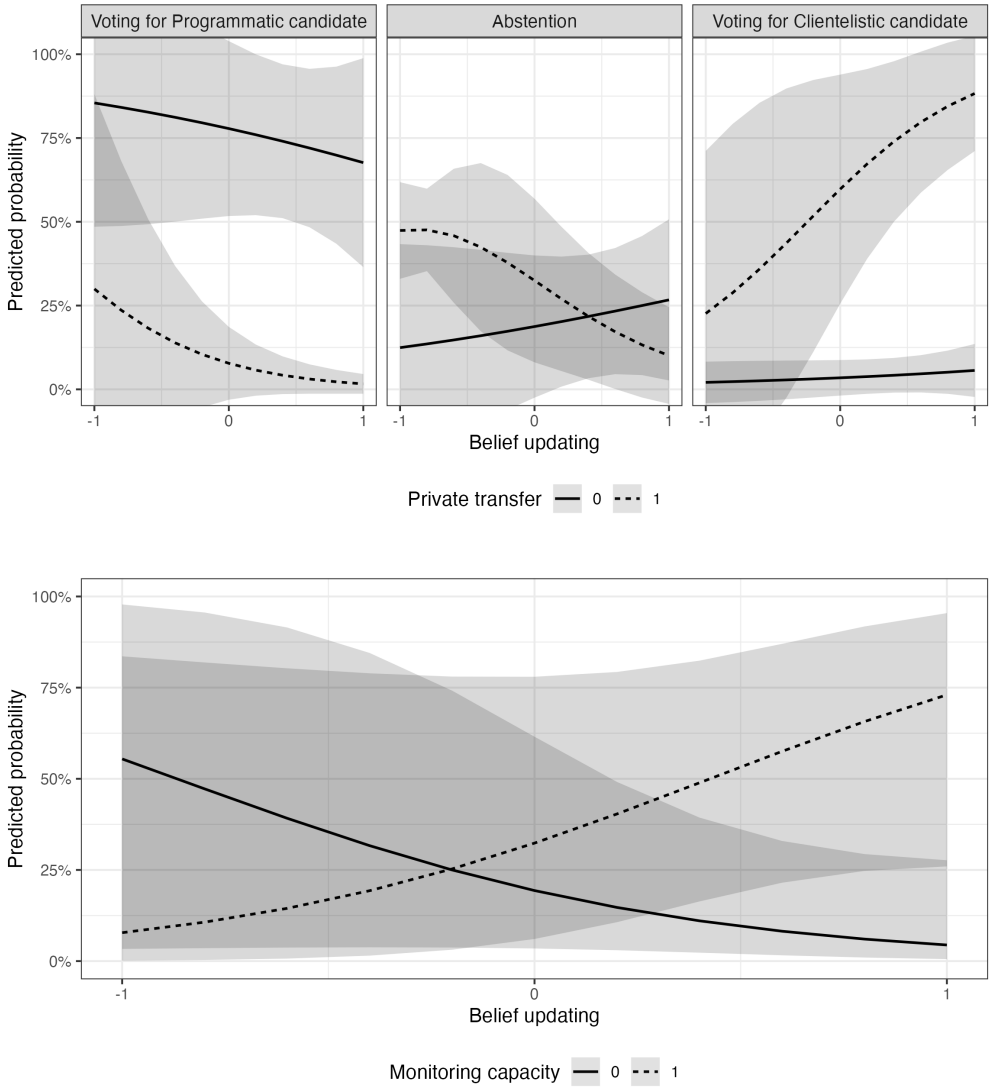
E.12 Replication of key results (Section E.8) with lagged variables

Table E.12.1: Regression results

	Dependent variable:			
	Vote choice (-1/0/1)		Transfer offer (0/1)	
	(1)	(2)	(3)	(4)
Belief-updating score	1.081	0.517	-0.575	-1.646
	(0.800)	(0.906)	(0.943)	(1.146)
Private transfer offered	4.245**	3.729**		
	(0.525)	(0.623)		
Belief-updating score × Private transfer offered		1.108		
		(0.809)		
Monitoring capacity			2.420**	0.691
			(0.499)	(0.724)
Belief-updating score × Monitoring capacity				3.380**
				(1.180)
Private transfer offered in the previous round	0.463	0.593		
	(0.677)	(0.684)		
Vote choice in the previous round	0.022	-0.056		
	(0.400)	(0.405)		
Punished in the previous round	-1.076	-1.234		
	(0.832)	(0.842)		
Monitoring capacity in the previous round			-0.533	-0.455
			(0.484)	(0.504)
Offered a private transfer in the previous round			0.995	0.821
			(0.604)	(0.609)
Voter was punished in the previous round			-0.204	0.002
			(0.627)	(0.669)
Participant random effects :				
Variance	3.738	3.994	5.247	7.068
	(1.933)	(1.999)	(2.291)	(2.659)
Observations	300	300	300	300

Note: Models 1 to 4 use random effect regressions (ologit for Models 1 and 2 and logit for Models 3 and 4); standard errors in parentheses; cutoffs are suppressed in the report; * p<0.05, ** p<0.01; coefficients on *Role in the first six rounds*, *Age*, *Female*, *Christian*, *Muslim*, *Choice in the beauty contest*, *Num. of correct answers in the CRT*, *Altruism*, *Positive reciprocity*, and *Round* are suppressed in the report

Figure E.12.1: The predicted probabilities of vote choices and private transfer offers according to belief updating, using Models 2 and 4 in Table E.12.1



Note: Predicted probabilities in the upper and lower panels are computed using coefficients in Models 2 and 4 of the previous table, respectively; lines and grey areas indicate predicted probabilities and their 95% confidence intervals, respectively.