

Supplementary Information for**“Parochial Trust and Cooperation Across 17 Societies”**

Angelo Romano, Daniel Balliet, Toshio Yamagishi, James Liu

Table of Contents

	Page
1. Descriptives	2
2. Multilevel models	4
3. Cross-cultural variables	7
4. Payment models	10
5. Knowledge and reputational concern	11
6. Additional analyses	12
7. Instructions	15
7.1 Example: Common knowledge, Ingroup, Trust behavior and expectations	31
7.2 Example: Unilateral knowledge, Ingroup, Trust behavior and expectations	33
7.3 Example: Common knowledge, Outgroup, Trust behavior and expectations	35
7.4 Example: Unilateral knowledge, Outgroup, Trust behavior and expectations	37
7.5 Example: Unilateral knowledge, Stranger, Trust behavior and expectations	39
7.6 Example: Common knowledge, Ingroup, Trustworthiness	41
7.7 Example: Unilateral knowledge, Ingroup, Trustworthiness	42
7.8 Example: Common knowledge, Outgroup, Trustworthiness	43
7.9 Example: Unilateral knowledge, Outgroup, Trustworthiness	44
7.10 Example: Unilateral knowledge, Stranger, Trustworthiness	45
8. R codes multilevel models	46
9. Correlation between trust and trustworthiness behavior	48
10. References	49

1. Descriptives

Table S1. Survey language(s), sample sizes, proportion of females, mean and standard deviation of age, SVO slider means for each country. %F = proportion of females, SVO_{angle} = mean score SVO slider scale.

Countries	Language	<i>N</i>	% <i>F</i>	<i>M</i> _{age}	<i>SD</i> _{age}	<i>SVO</i> _{angle}
Argentina	Spanish	114	44.66	42.36	14.15	33.85
Brazil	Portuguese	125	50.00	38.55	11.84	31.31
China	Chinese	177	39.77	40.19	11.84	27.59
Estonia	Estonian	295	39.46	46.28	16.84	32.50
Germany	German	228	51.11	47.30	14.41	30.12
Indonesia	Indonesian	128	45.16	37.63	9.52	26.57
Italy	Italian	336	56.67	43.41	12.72	31.54
Japan	Japanese	200	38.38	46.78	12.39	30.57
New Zealand	English	180	53.93	49.09	15.45	32.56
Poland	Polish	262	48.08	42.61	13.25	30.44
Russia	Russian	281	51.08	40.92	11.08	27.96
South Korea	Korean	220	45.66	40.58	11.26	28.17
Spain	Spanish	127	51.59	45.70	12.30	32.51
Taiwan	Chinese	185	41.52	40.17	10.08	30.40
Turkey	Turkish	122	41.03	37.11	9.50	31.00
United Kingdom	English	161	52.83	51.06	14.37	30.01
United States	English	95	45.74	51.81	13.86	31.26
Total		3236	47.30	44.12	13.53	30.44

Table S1b. Means and standard deviations of trust behavior and trustworthiness per country.

Country	Trust Behavior	Trustworthiness
Argentina	2.82 (1.18)	46.84 (22.15)
Brazil	2.84 (1.18)	52.43 (25.78)
China	2.69 (1.15)	45.93 (21.60)
Estonia	2.59 (1.23)	44.79 (19.08)
Germany	2.54 (1.12)	40.73 (19.19)
Indonesia	2.81 (1.16)	47.98 (22.09)
Italy	2.43 (1.11)	41.99 (22.88)
Japan	2.11 (1.15)	44.33 (22.65)
New Zealand	2.76 (1.19)	47.92 (19.63)
Poland	2.58 (1.07)	45.96 (20.23)
Russia	2.51 (1.29)	40.76 (20.79)
South Korea	2.50 (1.08)	40.82 (19.18)
Spain	2.55 (0.97)	45.68 (23.72)
Taiwan	2.82 (1.16)	44.64 (22.28)
Turkey	2.75 (1.18)	48.56 (24.92)
United Kingdom	2.57 (1.27)	44.79 (25.52)
United States	2.71 (1.34)	45.03 (23.12)

2. Multilevel models

In this section, we provide the full report of the results of the model. First, we run the model with only the Contrast 1 and Knowledge variables (Table S2), then we added in the model a measure of social value orientation (Table S3) and finally we added the gender variable (Table S4).

Table S2. The multilevel models of Contrast 1 and Knowledge predicting trust behavior, trustor expectations and trustworthiness.

Variables	Trust behavior				Trustor expectations				Trustworthiness			
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Contrast 1	0.19	0.04	5.07	<0.001	0.29	0.08	3.58	0.002	0.95	0.27	3.55	<0.001
Knowledge	0.18	0.01	12.00	<0.001	0.31	0.03	8.77	<0.001	1.24	0.21	5.89	0.001
Contrast 1 × Knowledge	-0.03	0.02	-1.47	0.14	0.02	0.05	0.33	0.74	0.43	0.32	1.35	0.18

Note. Contrast1 = ingroup vs outgroup + stranger conditions; Knowledge = common vs unilateral knowledge conditions; × = interaction term.

Table S3. The multilevel models of Contrast 1, Knowledge, and SVO predicting trust behavior, trustor expectations and trustworthiness.

Variables	Trust behavior				Trustor expectations				Trustworthiness			
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Contrast 1	0.22	0.05	5.01	<0.001	0.33	0.10	3.29	<0.001	1.67	0.43	3.86	<0.001
Knowledge	0.18	0.01	11.98	<0.001	0.31	0.04	8.56	<0.001	1.20	0.21	5.67	<0.001
SVO angle	0.006	0.001	4.76	<0.001	-0.01	0.003	-2.27	0.02	0.13	0.03	5.12	<0.001
Contrast 1 × Knowledge	-0.03	0.02	-1.33	0.18	0.04	0.05	0.68	0.49	0.41	0.32	1.26	0.21
Contrast 1 × SVO angle	-0.0013	0.0008	-1.54	0.12	-0.001	0.002	-0.83	0.41	-0.02	0.01	-1.88	0.06

Note. Contrast1 = ingroup vs outgroup + stranger conditions; Knowledge = common vs unilateral knowledge conditions; SVO angle = measure of social value orientations; × = interaction term.

Table S4. The multilevel models of Contrast 1, Knowledge, Gender and SVO predicting trust behavior, trustor expectations and trustworthiness.

Variables	Trust behavior				Trustor expectations				Trustworthiness			
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Contrast 1	0.19	0.05	4.12	0.001	0.26	0.11	2.43	0.01	1.22	0.48	2.61	0.009
Knowledge	0.18	0.02	11.97	<0.001	0.32	0.04	8.81	<0.001	1.23	0.25	5.76	<0.001
SVO angle	0.006	0.001	4.86	<0.001	-0.007	0.004	-2.11	0.03	0.13	0.03	5.03	<0.001
Gender	0.09	0.04	2.49	0.01	0.42	0.10	4.14	<0.001	3.16	0.74	4.35	<0.001
Contrast 1 × Knowledge	-0.03	0.02	-1.31	0.19	0.03	0.05	0.61	0.54	0.41	0.32	1.27	0.20
Contrast 1 × SVO angle	-0.001	0.0008	-1.52	0.13	-0.001	0.002	-0.79	0.43	-0.02	0.01	-1.63	0.10
Contrast 1 × Gender	0.06	0.02	2.80	0.005	0.13	0.05	2.46	0.01	0.53	0.32	1.65	0.10

Note. Contrast1 = ingroup vs outgroup + stranger conditions; Knowledge = common vs unilateral knowledge conditions; SVO angle = measure of social value orientations; Gender = gender variable; × = interaction term.

3. Cross-cultural Variables

Table S5. Cross-societal variables and their corresponding source and year of reference.

Cross-cultural variables	References	Year
1 Government_effectiveness	world_bank http://info.worldbank.org/governance/wgi/index.aspx#home	2015
2 Human development index	United Nations Development Programme	2015
3 Market_competitiveness	http://reports.weforum.org/global-competitiveness-report-2014-2015/rankings/	2014-2015
4 Protestant	World Value Survey (WVS)	2014
5 Religiosity_attendance	WVS	2014
6 Religiosity	WVS	2014
7 Pathogen stress	Murray & Schaller (2010)-Historical prevalence of infectious disease within 230 geopolitical regions: a tool for investigating origins of cultures. <i>Journal of cross cultural psychology</i> , 41(1), 99-108	2010
8 GINI	world_bank http://info.worldbank.org/governance/wgi/index.aspx#home	2014
9 GDP	world_bank http://info.worldbank.org/governance/wgi/index.aspx#home	2015
10 GDP(growth) across years	world_bank http://info.worldbank.org/governance/wgi/index.aspx#home	2008-2015
11 Democracy	WVS	2014
12 Compatriotism	WVS	2014
13 Collectivism	https://geert-hofstede.com/national-culture.html	2010
14 Rule of law	http://data.worldjusticeproject.org/	2016
15 Compatriotism	Van de Vliert, E. (2011). Climato-economic origins of variation in ingroup favoritism. <i>Journal of Cross-Cultural Psychology</i> , 42(3), 494-515.	2010
16 Nepotism	Van de Vliert, E. (2011)	2010
17 Familism	Van de Vliert, E. (2011).	2010
18 Globalization	http://globalization.kof.ethz.ch/	2012
19 Belief in hell	WVS	2014
20 Norms of cooperation	WVS	2014

Table S6. Multilevel models w/cross cultural variables predicting trust behavior, trustor expectations, and trustworthiness. Each variable was standardized before running the model.

Cross cultural factors	Trust behavior				Trustor Expectations				Trustworthiness			
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Contrast1	0.16	0.04	3.88	<0.001	0.20	0.10	2.06	0.04	0.53	0.64	0.82	0.41
Knowledge	0.19	0.03	7.24	<0.001	0.32	0.07	4.67	<0.001	1.24	0.46	2.55	0.01
Rule of law	0.27	0.14	1.86	0.09	0.27	0.44	0.62	0.55	2.04	1.74	1.17	0.27
SVO	0.09	0.01	7.19	<0.001	-0.09	0.03	-3.04	0.002	1.78	0.22	7.79	<0.001
Belief hell	0.21	0.08	2.56	0.03	0.36	0.26	1.40	0.20	1.62	1.04	1.55	0.16
Gender	0.09	0.02	3.57	<0.001	0.38	0.06	5.76	<0.001	3.19	0.46	6.95	<0.001
GINI	0.03	0.03	1.02	0.34	0.04	0.11	0.36	0.73	1.87	0.52	3.57	0.01
GDP per capita	-0.03	0.04	-0.75	0.48	-0.27	0.15	-1.87	0.10	-2.13	0.68	-3.13	0.02
Parasite stress	-0.01	0.05	-0.22	0.83	0.01	0.17	0.07	0.95	0.41	0.67	0.62	0.56
Protestant	-0.01	0.05	-0.27	0.79	-0.01	0.16	-0.02	0.98	0.06	0.62	0.10	0.92
Religiosity attendance	-0.21	0.07	-2.80	0.02	-0.19	0.23	-0.84	0.42	-0.18	0.94	-0.19	0.85
Market competitiveness	0.01	0.08	0.16	0.87	-0.15	0.23	-0.64	0.54	-0.54	0.90	-0.61	0.56
Government effectiveness	-0.27	0.16	-1.75	0.12	-0.13	0.48	-0.27	0.80	1.24	1.90	0.65	0.53
Knowledge × Contrast1	-0.03	0.04	-0.88	0.37	0.03	0.11	0.27	0.78	0.39	0.74	0.53	0.60
Rule of law × Contrast1	0.07	0.12	0.60	0.56	0.01	0.25	0.02	0.98	-0.23	1.54	-0.15	0.88
SVO × Contrast1	-0.02	0.02	-0.85	0.39	-0.01	0.05	-0.29	0.77	-0.24	0.36	-0.65	0.51
Belief hell × Contrast1	0.004	0.07	0.001	0.99	-0.11	0.14	-0.77	0.45	0.23	0.85	0.28	0.78
Gender × Contrast1	0.06	0.04	1.60	0.11	0.14	0.10	1.37	0.17	0.69	0.73	0.95	0.34
Parasite stress × Contrast1	-0.04	0.04	-1.04	0.32	-0.09	0.09	-1.09	0.29	-0.48	0.51	-0.94	0.35
Protestant × Contrast1	-0.08	0.04	-1.88	0.09	-0.12	0.08	-1.40	0.18	-0.43	0.51	-0.83	0.41
Religiosity attendance × Contrast1	0.03	0.06	0.55	0.60	0.10	0.12	0.89	0.38	-0.04	0.69	-0.05	0.95
Market competitiveness × Contrast1	0.17	0.07	2.49	0.03	0.26	0.14	1.80	0.08	0.60	0.89	0.67	0.50
Government effectiveness × Contrast1	-0.11	0.13	-0.80	0.44	-0.02	0.28	-1.10	0.92	0.02	1.74	0.01	0.99

Note. Contrast1 = ingroup vs outgroup + stranger conditions; Knowledge = common vs unilateral knowledge conditions; Rule of law = index of authority of laws within a country; SVO = measure of social value orientations; Belief hell = proportion of people believing in hell within a country; Gender = gender variable; GINI = index of income inequality within a country; GDP per capita = gross domestic product per capita within a country; Parasite stress = historical disease prevalence index; Protestant = proportion of protestants within a country; Religiosity attendance = frequency of church attendance within a country; Market competitiveness = level of productivity of a country; Government effectiveness = ability of the government to implement sound policies; \times = interaction term. We compared several models with other models through the Akaike information criteria and the Bayesian information criteria. The model with the best fit was always the one that did not include the cultural variables. Nonetheless, we report above a model that includes all the variables investigated. The model does not include Taiwan since most of the cultural data were missing for this country.

4. Payment models

Table S7. Multilevel models with the data from the countries that included a manipulation of real and hypothetical payments (United Kingdom and South Korea). We used Contrast 1 (ingroup vs outgroup and strangers), Common/Unilateral Knowledge, and participant payment were level-1 predictors in the models. Countries and participants were level-2 predictors in the models. We conducted each model with the three dependent variables: Trust behavior, trustor expectations, and trustworthiness.

Variables	Trust behavior				Trustor expectations				Trustworthiness			
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Contrast 1	0.09	0.07	1.32	0.18	0.16	0.15	1.10	0.27	0.31	0.91	0.34	0.73
Knowledge	0.12	0.07	1.70	0.09	0.50	0.15	3.35	<0.001	0.88	0.91	0.97	0.83
Payment	0.24	0.12	2.08	0.04	0.34	0.29	1.16	0.24	0.61	2.26	0.27	0.79
Contrast 1 × Knowledge	-0.10	0.09	-1.17	0.24	-0.12	0.20	-0.64	0.52	-1.00	1.21	-0.83	0.40
Payment × Contrast1	0.05	0.10	0.50	0.62	-0.08	0.21	-0.38	0.70	-0.56	1.30	-0.43	0.67
Payment × Knowledge	-0.03	0.10	-0.70	0.48	-0.26	0.21	-1.22	0.22	-0.90	1.30	-0.69	0.49

Note. Contrast1 = ingroup vs outgroup + stranger conditions; Knowledge = common vs unilateral knowledge conditions; Payment = real incentives vs hypothetical scenarios conditions; × = interaction term.

5. Knowledge and reputational concern

We tested if the common vs unilateral knowledge manipulation affects reputational concern in an experimental study conducted on Mturk ($N = 687$). The study was a 2 (ingroup vs outgroup partner group membership; using minimal group paradigm) \times 2 (High cohesion vs low cohesion) \times 2 (common vs unilateral knowledge) between-subjects experimental design. Our dependent measure was cooperative behavior in one-shot prisoner's dilemma task. We used a measure of reputational concern that has been validated in previous research (1,2). The measure includes four items on a 5-point Likert scale. An example item includes; "*During the decision making task, I thought about how others would think about me*". Participants completed the measure of reputational concern after making their decision in the prisoner's dilemmas task. The knowledge conditions had a small but significant effect on reputational concern, $t(685) = 2.25, p = 0.025, d = 0.17$. Participants in the common knowledge condition reported higher degree of reputational concern ($M = 2.70, SD = 1.04$) compared to participants in the unilateral knowledge condition ($M = 2.52, SD = 0.97$).

6. Additional analyses

6.1. Multilevel models assuming a binomial distribution

In addition to the models presented in our paper, we ran additional analyses that consider the discrete and censored nature of the dependent variables. In this section, we present multilevel generalized linear models on trust and trustor expectations, assuming the data are binomially distributed. These models were run in R with the *lme4* package (3).

The multilevel generalized linear models of Contrast 1 and Knowledge predicting trust behavior and trustor expectations.

Fixed effects on **Trust behavior**:

	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>
(Intercept)	-0.01	0.05	-0.28	0.77
Contrast1	0.17	0.03	5.01	<0.001
Knowledge	0.16	0.02	8.05	<0.001
Contrast1 × Knowledge	-0.03	0.03	-0.97	0.333

Fixed effects on **Trustor expectations**:

	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>
(Intercept)	-1.06	0.05	-21.93	<0.001
Contrast1	0.11	0.03	3.68	<0.001
knowledge	0.12	0.01	8.94	<0.001
Contrast1 × Knowledge	0.01	0.02	0.01	0.94

The multilevel models of Contrast 1, Knowledge, and SVO predicting trust behavior and trustor expectations.

Fixed effects on **Trust behavior**:

	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>
(Intercept)	-0.01	0.05	-0.15	0.88
Contrast1	0.17	0.03	4.95	<0.001
knowledge	0.17	0.02	8.04	<0.001
SVO angle	0.08	0.02	4.64	<0.001
Contrast1 × Knowledge	-0.03	0.03	-0.88	0.38
Contrast1 × SVO angle	-0.02	0.01	-1.11	0.26

Fixed effects **Trustor Expectations:**

	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>
(Intercept)	-1.05	0.05	-20.60	<0.001
Contrast1	0.11	0.03	3.59	<0.001
Knowledge	0.12	0.01	8.74	<0.001
SVO angle	-0.02	0.02	-1.41	0.16
Contrast1 × Knowledge	0.01	0.02	0.43	0.67
Contrast1 × SVO angle	-0.01	0.01	-0.86	0.39

The multilevel models of Contrast 1, Knowledge, Gender and SVO predicting trust behavior and trustor expectations

Fixed effects on **Trust behavior:**

	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>
(Intercept)	-0.05	0.05	-1.06	0.29
Contrast1	0.14	0.04	3.68	<0.001
Knowledge	0.17	0.02	8.01	<0.001
SVO angle	0.08	0.02	4.73	<0.001
Gender	0.09	0.03	2.49	0.01
Contrast1 × Knowledge	-0.03	0.03	-0.86	0.39
Contrast1 × SVO angle	-0.02	0.02	-1.09	0.28
Contrast1 × Gender	0.06	0.03	1.98	0.05

Fixed effects **Trustor expectations:**

	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>
(Intercept)	-1.14	0.05	-20.98	<0.001
Contrast1	0.09	0.03	2.67	0.007
Knowledge	0.12	0.01	8.94	<0.001
SVO angle	-0.02	0.01	-1.27	0.204
Gender	0.16	0.03	4.24	<0.001
Contrast1 × Knowledge	0.01	0.02	0.35	0.72
Contrast1 × SVO angle	-0.01	0.01	-0.81	0.42
Contrast1 × Gender	0.04	0.02	1.98	0.05

6.2. Tobit models

We further analyzed Tobit model for each country to observe whether we could replicate the findings reported in our meta-analysis. To run these models, we used the software R and the package *censreg* (4).

	Ingroup Favoritism	Knowledge
Argentina	-0.12	0.18†
Brazil	0.007	0.15
China	0.08	0.02
Estonia	0.28**	0.19*
Germany	0.45**	0.15*
Indonesia	0.27*	0.21*
Italy	0.13*	0.15*
Japan	0.47**	0.30**
Korea	0.11	0.10
New Zealand	0.29**	0.23*
Poland	0.10	0.22**
Russia	0.29**	0.19*
Spain	0.09	0.17*
Taiwan	0.15†	0.15†
Turkey	0.10	0.27*
United Kingdom	0.18*	0.27*
United States	0.18	0.03

Significance level: † <.10; *<.05; **<.001

6.3. Between-subject effect of knowledge on trust behavior

To rule out the possibility that the effect of knowledge on trust was not due to the within-subjects structure of our design, we rerun the analysis only considering the first decision of each participant and test whether a between-subject manipulation of common versus unilateral knowledge had a significant effect on trust behavior. The model was a multilevel model where countries was a random factor. The final sample size for this analysis consisted of 1,241 participants. The results are consistent with the analyses using the entire data and the within-subjects manipulation. Participants give more to others when making trustor decisions in the common knowledge condition ($M = 2.74$, $SD = 1.03$), compared to the unilateral knowledge condition, ($M = 2.57$, $SD = 1.08$), $b = 0.16$, $t(1231.34) = 2.60$, $p = .009$.

7. Instructions

Informed Consent Form

Introduction

This is a study on decision making. The study is being conducted by Professor James Liu at Massey University and Professor Daniel Balliet at Free University of Amsterdam.

We aim at testing some theories about decision making. **For this reason, we kindly ask you to answer the survey seriously.**

Procedures

The purpose of this research is to examine decision making in different situations. **You** will interact with some other participants in several decision making tasks. **Then**, you will be asked to answer some questions about the decision making tasks. We estimate it will take no more than **25 minutes** to complete the study.

Risks/Discomforts

There are no anticipated risks for participating in this study.

Benefits

A potential benefit of participating is that you might learn something about decision-making that you might not have been aware of before. You may also be assigned to make a decision involving or being affected by someone from another country.

Confidentiality

All of your answers will be kept confidential. Any information you provide will be stored indefinitely on the encrypted and password protected site, and on password-protected computers only. When presenting the results of this research, we will in no way focus on individual participants' responses and will instead present the findings in summary form. You will not be asked for information that would enable you to be identified personally.

This research is supported by a grant from the Department of Defense- anonymous data can be shared with their qualified personnel.

Compensation

Independent Variable:

[payment condition only in United Kingdom and South Korea]

15. Depending on you and others' decisions in the decision-making tasks, you will have **an opportunity to earn up to \$\$ dollars.**

[no payment condition]

You are playing for Monetary Units, a fictional currency that gauges how well you are doing at the decision-making task. These Monetary Units are meaningful in the context of the experiment, but have no value in the real world.

End IV

Participation & Rights

Your participation in this study is completely voluntary. You are free to choose to withdraw from the study at any point.

Questions about the Research

If you would like to receive a summary of the results of this study, or have any questions, please email Professor James Liu at digital.influence@massey.ac.nz. This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application MUHECANNOR 16/31. If you have any ethics concerns, please email humanethicsnorth@massey.ac.nz.

If you understand the information above and agree to participate in this research project, please click "I Agree" to start with this study..

If you do not wish to participate right now, please close your web browser.

Thank you for considering participating.

I Agree

Welcome to the study!

This is a study about decision making.

The study involves **participants from 17 countries around the world**. The countries are listed below.

You will be asked to make several decisions in **up to 12** decision making tasks. You will be paired with a different person in each decision making task.





Please read the instructions carefully because you have the possibility to **earn Monetary Units based on your decisions and others' decisions.**

>>

TRUST GAME: Instructions

In this task, there are two roles : (1) TRUST PERSON, (2) RETURN PERSON

>>

TRUST GAME: Instructions

In this task, there are two roles : (1) TRUST PERSON, (2) RETURN PERSON

TRUST PERSON: decides how much to trust another person to return valuable resources

TRUST PERSON



TRUST GAME: Instructions

In this task, there are two roles : (1) TRUST PERSON, (2) RETURN PERSON

TRUST PERSON: decides how much to trust another person to return valuable resources

TRUST PERSON



>>

TRUST GAME: Instructions

In this task, there are two roles : (1) TRUST PERSON, (2) RETURN PERSON

TRUST PERSON: decides how much to trust another person to return valuable resources

TRUST PERSON



RETURN PERSON

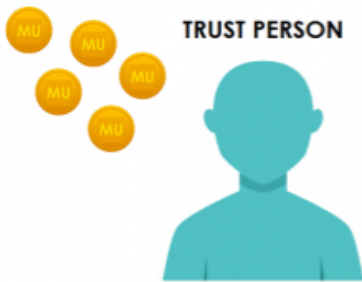


RETURN PERSON: decides whether or not to return valuable resources to the TRUST PERSON

>>

TRUST GAME: Instructions

To start, the TRUST PERSON will receive 5 monetary units.



TRUST GAME: Instructions

To start, the TRUST PERSON will receive 5 monetary units.

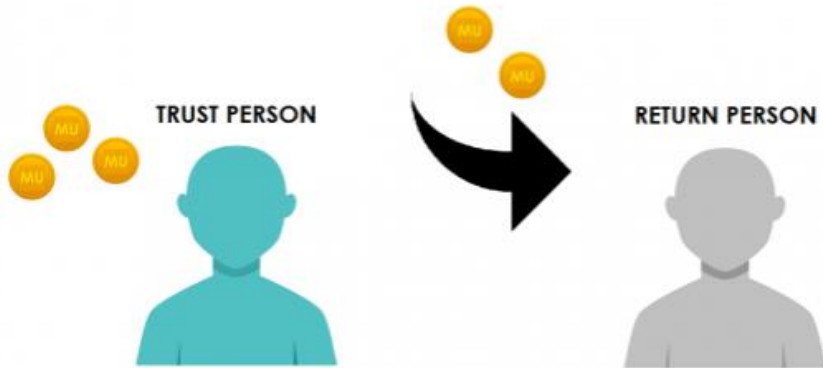
The TRUST PERSON will decide how much to trust the RETURN PERSON



TRUST GAME: Instructions

To start, the TRUST PERSON will receive 5 monetary units.

The TRUST PERSON will decide how much to trust the RETURN PERSON



The TRUST PERSON can send between 0 and 5 MU to the RETURN PERSON and keep the remaining 0 and 5 MU for him or herself

TRUST GAME: Instructions

To start, the TRUST PERSON will receive 5 monetary units.

The TRUST PERSON will decide how much to trust the RETURN PERSON

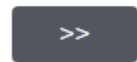


The TRUST PERSON can send between 0 and 5 MU to the RETURN PERSON and keep the remaining 0 and 5 MU for him or herself

Each MU that the TRUST PERSON sends to the RETURN PERSON will be tripled. For example, if the TRUST PERSON allocates 2 MU to the RETURN PERSON, the RETURN PERSON gets 6 MU.

TRUST GAME: Instructions

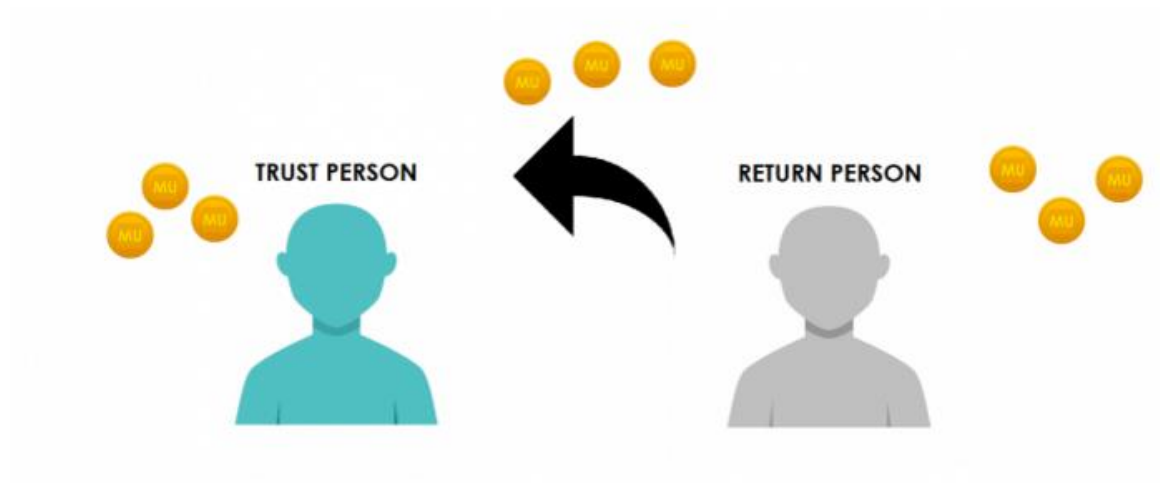
The RETURN PERSON gets to decide how much to return to the TRUST PERSON



TRUST GAME: Instructions

The RETURN PERSON gets to decide how much to return to the TRUST PERSON

The RETURN PERSON can send back any amount from 0 to the tripled amount received from TRUST PERSON (6 in this example)



TRUST GAME: Instructions

The RETURN PERSON gets to decide how much to return to the TRUST PERSON

The RETURN PERSON can send back any amount from 0 to the tripled amount received from TRUST PERSON (6 in this example)



The amount that the RETURN PERSON return to the TRUST PERSON will not be tripled. The RETURN PERSON can keep any money he or she does not return



In these tasks, you and other participants will be asked to make decisions either as the TRUST PERSON or the RETURN PERSON.

Then, you will be randomly matched with a partner.



To make sure you have understood the instructions, please answer the following questions:

You are the **TRUST PERSON**. You send **4 MU** (Please remember, each round you start with 5 MU).

The **RETURN PERSON** sends **3 MU** back to you. Then, (choose one)

- YOU earn 1, RETURN PERSON earns 9
 - YOU earn 1, RETURN PERSON earns 4
 - YOU earn 4, RETURN PERSON earns 9
 - YOU earn 4, RETURN PERSON earns 12
-

You are the **RETURN PERSON**. **TRUST PERSON** sends **3 MU**. You send back **2 MU**. Then, (choose one)

- TRUST PERSON earns 2, YOU earn 1
- TRUST PERSON earns 4, YOU earn 7
- TRUST PERSON earns 3, YOU earn 2
- TRUST PERSON earns 4, YOU earn 6

>>

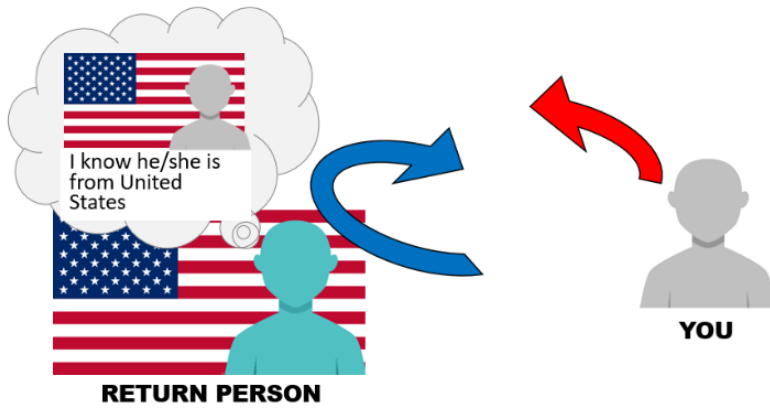
7.1. Common Knowledge, Ingroup, Trust Behavior

Please make a decision in the following situation

You are: **TRUST PERSON**

RETURN PERSON: **from United States**

RETURN PERSON **knows** where you are from



Number of MU you send to the RETURN PERSON (click one number)

- 0 1 2 3 4 5

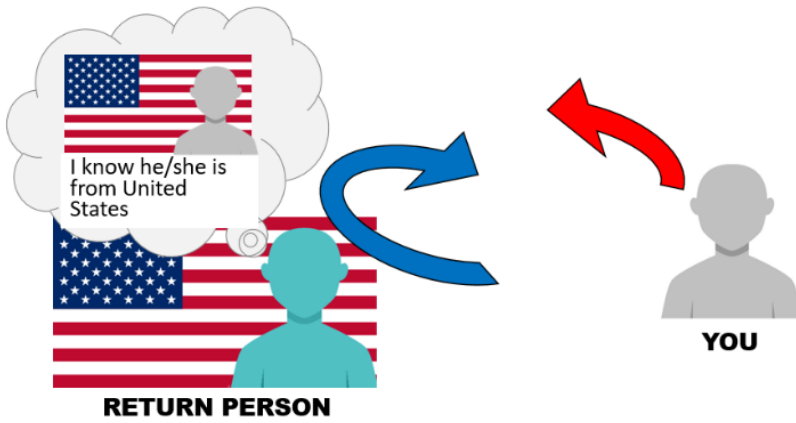
>>

Common Knowledge, Ingroup, Trustor Expectations

You are: **TRUST PERSON**

RETURN PERSON: from United States

RETURN PERSON knows where you are from



Set the button to a number

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

The number of MU
you expect to
get back from the
RETURN PERSON

>>

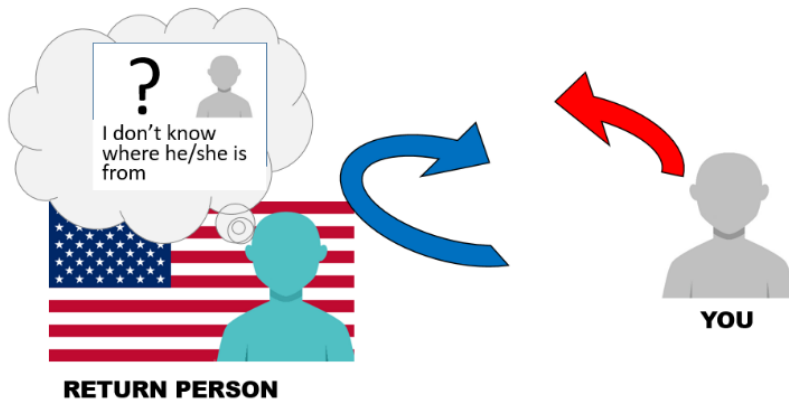
7.2. Unilateral Knowledge, Ingroup, Trust Behavior

Please make a decision in the following situation

You are: **TRUST PERSON**

RETURN PERSON: from **United States**

RETURN PERSON **does not know** where you are from



Number of MU you send to the RETURN PERSON (click one number)

- 0 1 2 3 4 5
-



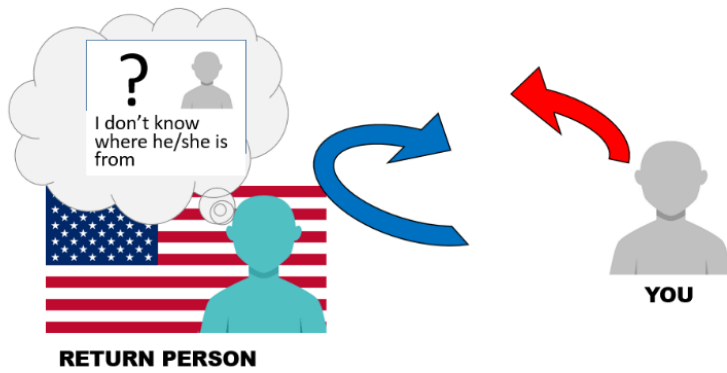
Unilateral Knowledge, Ingroup, Trustor Expectations

What do you expect from the RETURN PERSON?

You are: **TRUST PERSON**

RETURN PERSON: from **United States**

RETURN PERSON **does not know** where you are from



Set the button to a number

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

The number of MU you expect to get back from the RETURN PERSON



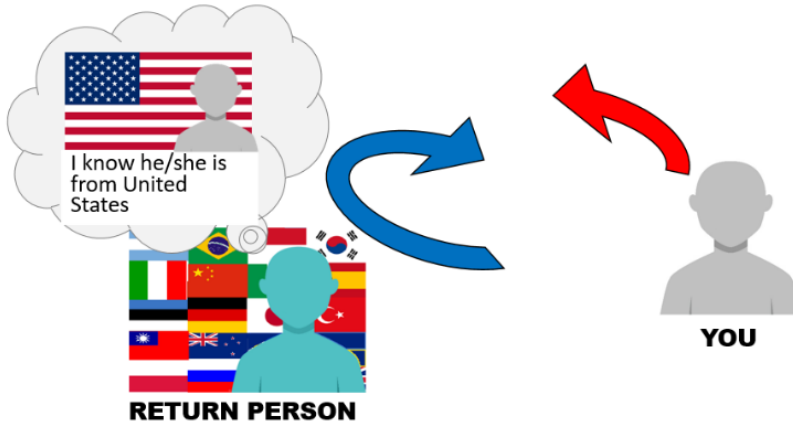
7.3. Common Knowledge, Outgroup, Trust Behavior

Please make a decision in the following situation

You are: **TRUST PERSON**

RETURN PERSON: from one of the other 16 countries (excluding United States)

RETURN PERSON knows where you are from



Number of MU you send to the RETURN PERSON (click one number)

- 0 1 2 3 4 5
-



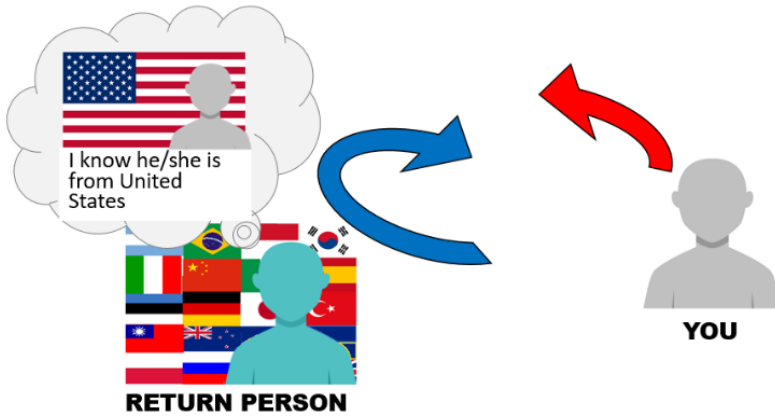
Common Knowledge, Outgroup, Trustor Expectations

What do you expect from the RETURN PERSON?

You are: **TRUST PERSON**

RETURN PERSON: from one of the other 16 countries (excluding United States)

RETURN PERSON knows where you are from



Set the button to a number

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

The number of MU
you expect to get
back from the
RETURN PERSON



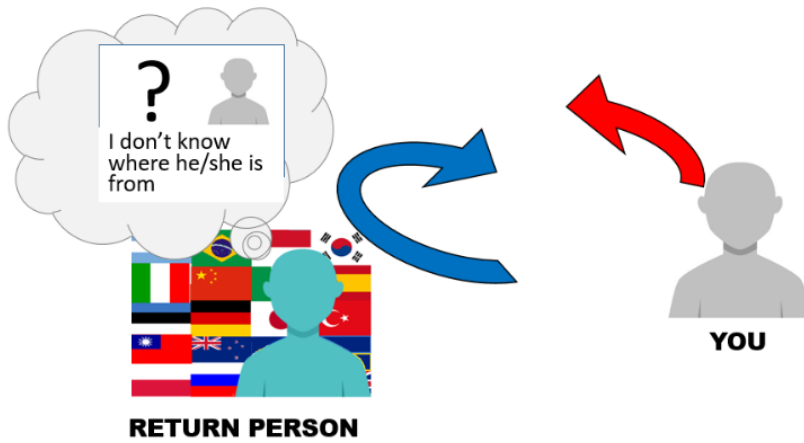
7.4. Unilateral Knowledge, Outgroup, Trust Behavior

Please make a decision in the following situation

You are: **TRUST PERSON**

RETURN PERSON: from one of the other 16 countries (excluding United States)

RETURN PERSON does not know where you are from



Number of MU you send to the RETURN PERSON (click one number)

- 0 1 2 3 4 5
-



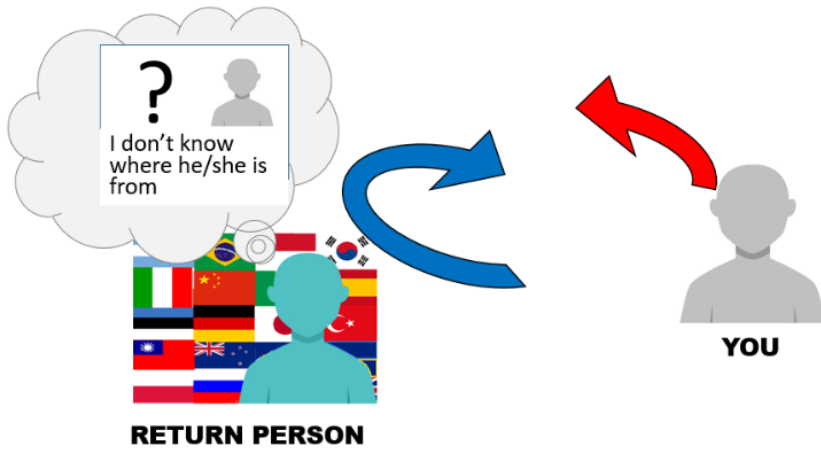
Unilateral Knowledge, Outgroup, Trustor Expectations

What do you expect from the RETURN PERSON?

You are: **TRUST PERSON**

RETURN PERSON: from one of the other 16 countries (excluding United States)

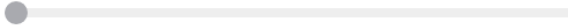
RETURN PERSON does not know where you are from



Set the button to a number

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

The number of MU
you expect to get
back from the
RETURN PERSON



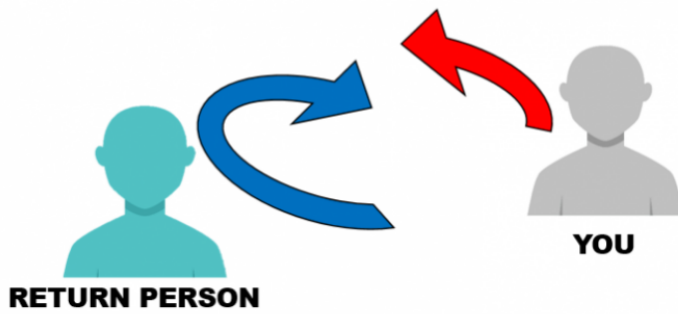
7.5. Unilateral Knowledge, Stranger, Trust Behavior

Please make a decision in the following situation

You are: **TRUST PERSON**

RETURN PERSON: **unknown**

RETURN PERSON **does not know** where you are from



Number of MU you send to the RETURN PERSON (click one number)

- | | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 0 | 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

>>

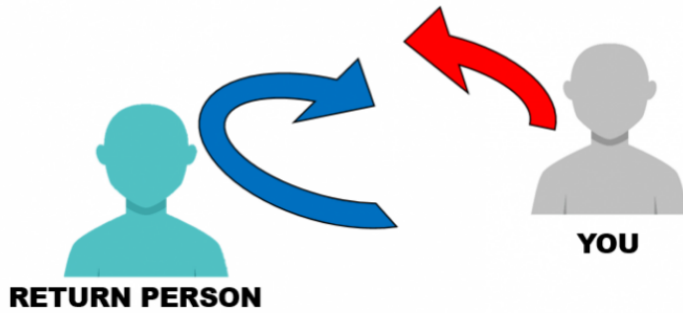
Unilateral Knowledge, Stranger, Trustor Expectations

What do you expect from the RETURN PERSON?

You are: TRUST PERSON

RETURN PERSON: unknown

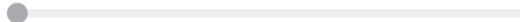
RETURN PERSON does not know where you are from



Set the button to a number

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

The number of MU
you expect to get
back from the
RETURN PERSON



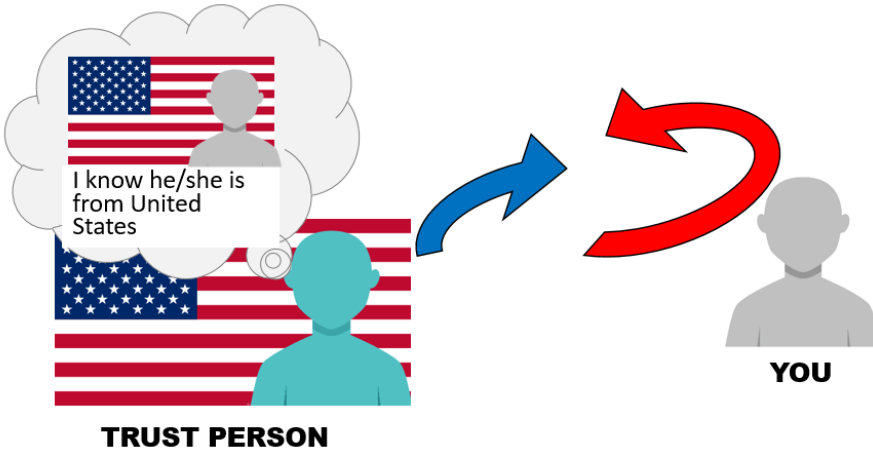
7.6. Common Knowledge, Ingroup, Trustworthiness

What would you do?

You are: **RETURN PERSON**

TRUST PERSON: from United States

TRUST PERSON knows where you are from



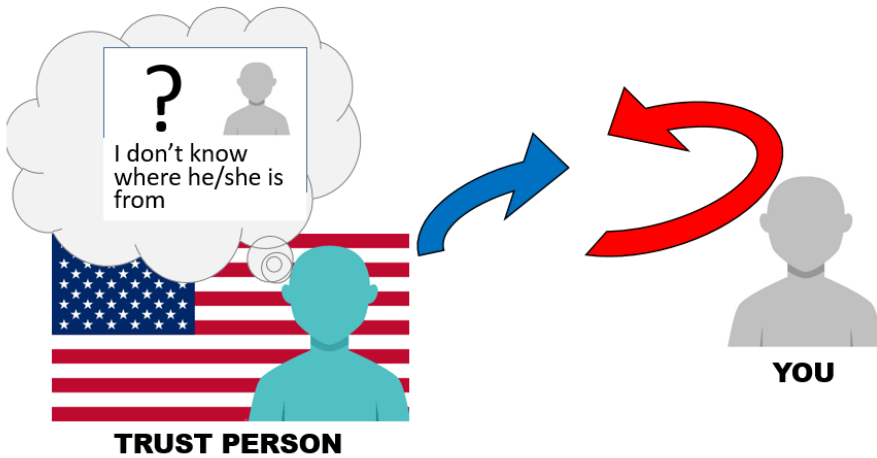
	the TRUST PERSON sends you 1 MU	the TRUST PERSON sends you 2 MU	the TRUST PERSON sends you 3 MU	the TRUST PERSON sends you 4 MU	the TRUST PERSON sends you 5 MU
How much would you send back IF: (choose one from the drawn box for each case)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

7.7. Unilateral Knowledge, Ingroup, Trustworthiness

You are: **RETURN PERSON**

TRUST PERSON: from **United States**

TRUST PERSON **does not know** where you are from



	the TRUST PERSON sends you 1 MU	the TRUST PERSON sends you 2 MU	the TRUST PERSON sends you 3 MU	the TRUST PERSON sends you 4 MU	the TRUST PERSON sends you 5 MU
How much would you send back IF: (choose one from the drawn box for each case)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

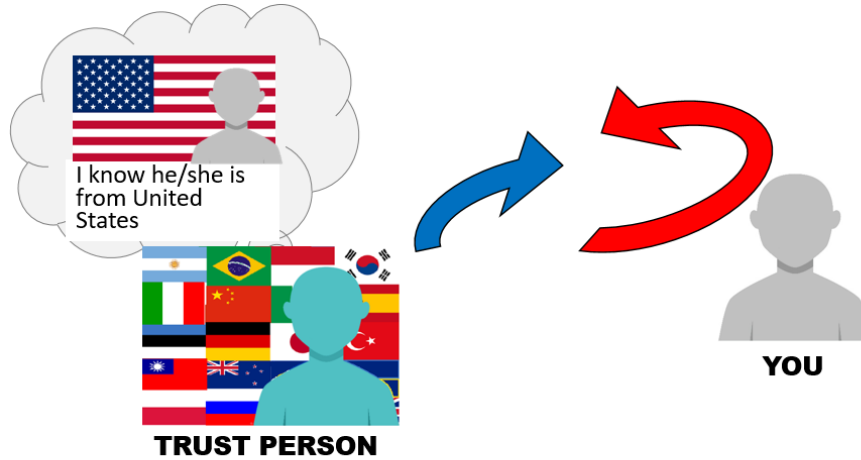
7.8. Common Knowledge, Outgroup, Trustworthiness

What would you do?

You are: RETURN PERSON

TRUST PERSON: from one of the other 16 countries (excluding United States)

TRUST PERSON knows where you are from



	the TRUST PERSON sends you 1 MU	the TRUST PERSON sends you 2 MU	the TRUST PERSON sends you 3 MU	the TRUST PERSON sends you 4 MU	the TRUST PERSON sends you 5 MU
How much would you send back IF: (choose one from the drawn box for each case)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

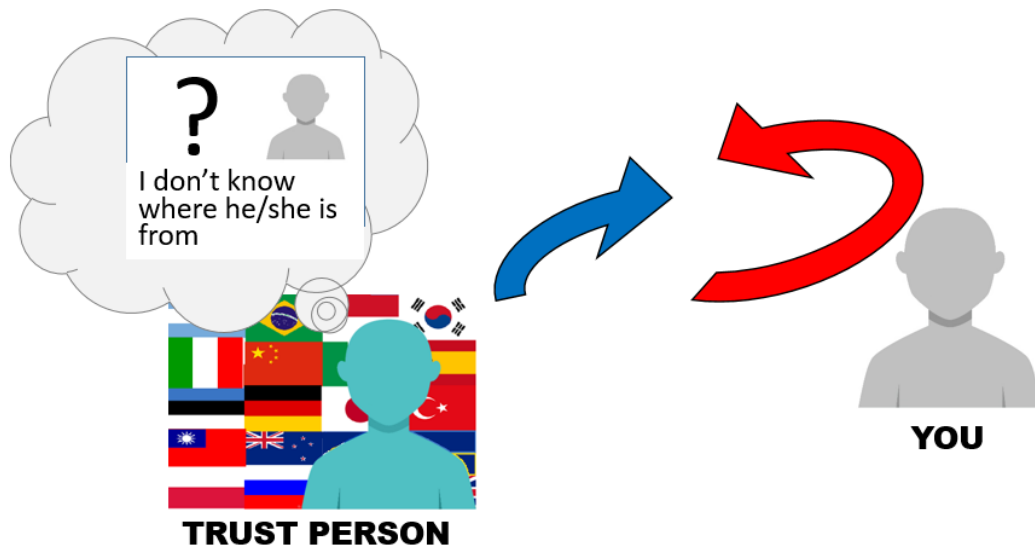
7.9. Unilateral Knowledge, Outgroup, Trustworthiness

What would you do?

You are: **RETURN PERSON**

TRUST PERSON: from one of the other 16 countries (excluding United States)

TRUST PERSON does not know where you are from



	the TRUST PERSON sends you 1 MU	the TRUST PERSON sends you 2 MU	the TRUST PERSON sends you 3 MU	the TRUST PERSON sends you 4 MU	the TRUST PERSON sends you 5 MU
How much would you send back IF: (choose one from the drawn box for each case)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

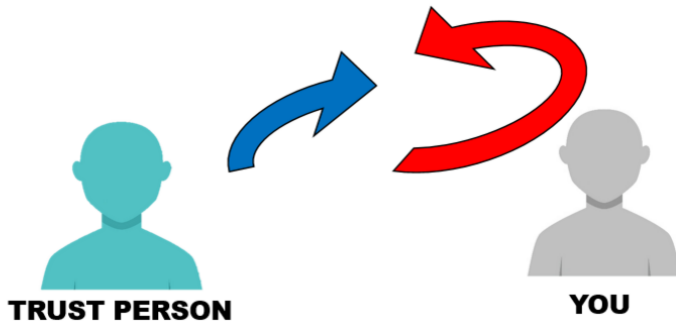
7.10. Unilateral Knowledge, Stranger, Trustworthiness

What would you do?

You are: RETURN PERSON

TRUST PERSON: unknown

TRUST PERSON does not know where you are from



	the TRUST PERSON sends you 1 MU	the TRUST PERSON sends you 2 MU	the TRUST PERSON sends you 3 MU	the TRUST PERSON sends you 4 MU	the TRUST PERSON sends you 5 MU
How much would you send back IF: (choose one from the drawn box for each case)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

>>

8. R codes multilevel models

Models with Contrast 1 and Knowledge.

```
lmer(Trust behavior~Contrast1*knowledge + (Contrast1|Country) + (1|ID), data=Tdata)
```

```
lmer(Trustor expectations~Contrast1*knowledge + (Contrast1|Country) + (1|ID), data=Tdata)
```

```
lmer(Trustworthiness~Contrast1*knowledge + (Contrast1|Country) + (1|ID), data=Tdata)
```

Models with Contrast 1, Knowledge and SVO.

```
lmer(Trust behavior~Contrast1*knowledge + SVO_angle*Contrast1 + (Contrast1|Country) + (1|ID), data=Tdata)
```

```
lmer(Trustor expectations~Contrast1*knowledge + SVO_angle*Contrast1 + (Contrast1|Country) + (1|ID), data=Tdata)
```

```
lmer(Trustworthiness~Contrast1*knowledge + SVO_angle*Contrast1 + (Contrast1|Country) + (1|ID), data=Tdata)
```

Models with Contrast 1, Knowledge, SVO and Gender.

```
lmer(Trust~Contrast1*knowledge + SVO_angle*Contrast1 + Contrast1*newGENDER + (Contrast1|Country) + (1|ID), data=Tdata)
```

```
lmer(Expectations~Contrast1*knowledge + SVO_angle*Contrast1 + Contrast1*newGENDER + (Contrast1|Country) + (1|ID), data=Tdata)
```

```
lmer(Trustworthiness~Contrast1*knowledge + SVO_angle*Contrast1 + Contrast1*newGENDER + (Contrast1|Country) + (1|ID), data=Tdata)
```

Models with Contrast 1, Knowledge, SVO, Gender and cross-cultural variables.

```
lmer(Trust behavior~Contrast1*knowledge+Contrast1*Rule_of_Law_s+Contrast1*SVO_angle+Contrast1*Belief_hel  
l_s+Contrast1*newGENDER+GINI_s+GDPcapita_2015_s+Contrast1*Parasite_stress_s+Contra  
st1*Protestant_s+Contrast1*Religiosity_attendance_s+Contrast1*market_competitiveness_s+Co  
ntrast1*Government_effectiveness_s+(ContrastContrast1|Country), data=Tdata)
```

```
lmer(Trustor_expectations~
Contrast1*knowledge+Contrast1*Rule_of_Law_s+Contrast1*SVO_angle+Contrast1*Belief_hell_s+Contrast1*newGENDER+GINI_s+GDPcapita_2015_s+Contrast1*Parasite_stress_s+Contrast1*Protestant_s+Contrast1*Religiosity_attendance_s+Contrast1*market_competitiveness_s+Contrast1*Government_effectiveness_s+(Contrast1|Country), data=Tdata)
```

```
lmer(Trustworthiness~Contrast1*knowledge+Contrast1*Rule_of_Law_s+Contrast1*SVO_angle+Contrast1*Belief_hell_s+Contrast1*newGENDER+GINI_s+GDPcapita_2015_s+Contrast1*Parasite_stress_s+Contrast1*Protestant_s+Contrast1*Religiosity_attendance_s+Contrast1*market_competitiveness_s+Contrast1*Government_effectiveness_s+(Contrast1|Country), data=Tdata)
```

9. Correlation between trust and trustworthiness

Previous research found medium correlation between trust behavior and trustworthiness.

Yamagishi and colleagues (5) found a correlation of 0.52 while Peysakhovich, Nowak and Rand (6) found a correlation of 0.49. In our study, the correlation between trust and trustworthiness was 0.27.

10. References

1. Romano A, Balliet D, Wu J (2017) Unbounded indirect reciprocity: Is reputation-based cooperation bounded by group membership?. *J Exp Soc Psychol* 71:59–67.
2. Wu J, Balliet D, Van Lange PA (2015) When does gossip promote generosity? indirect reciprocity under the shadow of the future. *Soc Psychol Pers Sci*, 6:923–930.
3. Bates D, Sarkar D, Bates MD, Matrix L (2007) The lme4 package. R package version, 2:74.
4. Henningsen, A. (2010). Estimating censored regression models in R using the censReg Package. *R package vignettes*.
5. Peysakhovich A, Nowak MA, Rand DG (2014) Humans display a ‘cooperative phenotype’ that is domain general and temporally stable. *Nat Commun* 5:4939.
6. Yamagishi T, et al. (2013) Is behavioral pro-sociality game-specific? Pro-social preference and expectations of pro-sociality. *Organ Behav Hum Decis Process* 120(2):260–271.