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Discussion Papers in
Economics and Econometrics

Conspiracy Theories and Strategic Sophistication: an Online Study

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No. 2404

This paper is available on our website
http://www.southampton.ac.uk/socsci/economics/research/papers

ISSN 0966-4246

Conspiracy Theories and Strategic Sophistication: an Online Study.

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Abstract

The prevalence of conspiracy theories is a concern in western countries, yet the phenomenon is rarely addressed in experimental economics. In two preregistered online studies ($N_{Study\ 1} = 97$, $N_{Study\ 2} = 203$) we examine the relationship between exposure to conspiracy modes of thinking, self-reported conspiracy mentality, and behaviour in an economic game that measures strategic sophistication. Part of our design was based on Balafoutas, Libman, Selamis, and Vollan (2021), who found a positive relationship between exposure to conspiracy modes of thinking and strategic sophistication. Our results did not corroborate their findings in an online setting. Our measures of conspiracy mentality were modestly correlated with strategic sophistication in Study 2, but not in Study 1. Conspiracy mentality was also correlated with manipulativeness.

Keywords: Conspiracy theory, k-level reasoning, trust, strategic sophistication

JEL Classification: D91 , C90 , C72

1 Introduction

Conspiracy theories can be defined as "claims that the public is being pervasively lied to regarding some aspect of reality, to allow some group(s) to achieve a self-serving agenda" (Nera & Schöpfer, 2023). Such theories have gathered much attention from the public and researchers alike (Douglas & Sutton, 2023). The study of conspiracy theories is a highly interdisciplinary endeavour, but the field of economics has yet to be drawn into the discussion. For instance, no economist is to be found among the contributors of an extensive recent handbook on conspiracy theories (Butter & Knight, 2020).

However, since a key component of a conspiracy is that it involves an intentional manipulation of others by a small group of actors, the issue arises regarding whether strategic modes of thinking are associated with a conspiracy mentality or beliefs. Economists have long considered the notion of strategic sophistication, that is, "the extent to which players' behaviour reflects attempts to predict others' decisions" (Costa-Gomes, Crawford, & Broseta, 2001). It is worth examining whether conspiracy thinking may be associated with a tendency to ponder about others' incentives and goals, and the implications of those.

If indeed there is a positive relationship between conspiracy mentality and the level of strategic sophistication, it would empirically corroborate conspiracy believers' perception that they are sophisticated 'critical thinkers' (Harambam & Aupers, 2017). In the only past study that we are familiar with in economics, Balafoutas et al. (2021) found that exposure to a short clip promoting the moon landing conspiracy theory increased participants' strategic sophistication. In the current research, we build on their work and examine the robustness of their findings in an online environment.

In our first study we tested whether there is a positive association between conspiracy mentality – as measured by the Conspiracy Mentality Questionnaire (Bruder, Haffke, Neave, Nouripanah, & Imhoff, 2013) – and strategic sophistication behaviour – as measured by a version of the Money Request Game of Arad and Rubinstein (2012). In a second study, we follow the procedure of Balafoutas et al. (2021), with the addition of two informative questionnaires borrowed from social psychology: a conspiracy

mentality questionnaire and a manipulativeness questionnaire. Our key hypothesis is that conspiracy mentality and strategic sophistication share a common tendency to ponder about the possibility of intentional manipulation by others. Put differently, we hypothesize that there is some stable mode of thinking in suspecting intentional manipulation that links conspiracy beliefs to strategic sophistication.

Our results from the first experiment did not confirm the hypothesized correlation between the construct of conspiracy mentality and the level of strategic sophistication. In the second study, this correlation was weakly positive for the whole sample and among those who were exposed to conspiracy theories, while not significant in the control group. However, we did not reproduce the main findings of Balafoutas et al. (2021), as we did not find a significant difference between the level of strategic sophistication in the treatment (i.e., the condition with the conspiracy theory priming) and in the control group. Neither did we find significant differences in conspiracy mentality and manipulativeness across these two groups.

1.1 Study 1

Study 1 was pre-registered on OSF: https://osf.io/p54n7.[1] In Study 1, we followed a design similar to Balafoutas et al. (2021) to explore the possible link between the generic propensity to believe in conspiracy theories (i.e., conspiracy mentality, Bruder et al., 2013) and strategic sophistication. We hypothesized a positive relationship between conspiracy mentality and strategic sophistication. The study procedure consisted of two parts: the completion of a conspiracy mentality questionnaire and participation in a strategic sophistication game.

The Conspiracy Mentality Questionnaire (Bruder et al., 2013) is an instrument designed to efficiently assess differences in the generic tendency to engage in conspiracist ideation. The questionnaire comprises of five items on an 11-point Likert scale

[1] Our set of studies were approved by the Cyprus National Bioethics Committee [CNBC DECISION#2023.01.104] on 6 April 2023. Based on the Power analysis of Table 1 from Balafoutas et al. (2021), the smallest effect size of interest was d = 0.46. We created a Power curve for an independent t-test (Lakens, 2022) with a true effect size of $\delta = 0.46$ and an α of 0.05 as a function of the sample size. For a power of 90%, we needed 101 participants per group. Our target sample size was 101 participants per group for both studies. The power analysis script can be found on OSF (https://osf.io/evd5k/). We ran short of participants based on the lack of reliable answers, but close to the target (97 for Study 1, 98 and 105 for Study 2).

ranging from 0% "certainly not" to 100% "certain". Items are as follows "I think that..." 1) "many very important things happen in the world, which the public is never informed about.", 2) "politicians usually do not tell us the true motives for their decisions.", 3) "government agencies closely monitor all citizens.", 4) "events which superficially seem to lack a connection are often the result of secret activities", 5) "there are secret organizations that greatly influence political decisions."

The level of strategic sophistication was measured by a version of the "Money Request Game" by Arad and Rubinstein (2012). The players are divided into pairs, and each player is asked to bid an amount between 0.1 and 1 pound, with 0.1 pound possible increments for a total of 10 possible choices. Participants are told that they will receive the amount of their bid, but that if they bid exactly 0.1 pound less than the other player, they will receive an extra pound. Hence, bidding 10 pence less than the other player is the optimal response to any choice of the opponent except when the choice is 10 cents, in which case the optimal response is 1 pound. The level of strategic sophistication can be captured by the number of times a player applies this best response rule in their strategic reasoning.

A fully naive participant bids 1 pound, the highest available amount, and we call this behavior level-0 strategic sophistication reasoning. The participant who responds optimally to a level-0 opponent by choosing 0.9 pounds exhibits level-1 reasoning. The participant who best-responds to the level-1 opponent by choosing 0.8 pounds exhibits level-2 reasoning, and so on. In summary, our measure of strategic sophistication is an integer number from the 0-9 scale. We get the level of strategic sophistication by applying the formula $10 - 10 * Choice$ to the choice of the player. Due to the continual incentive to undercut the opponent's bid there is no pure strategy Nash equilibrium in the Money Request Game, in which both players best respond to each other's choice. However, there is a Nash equilibrium in mixed strategies, which we can use as a benchmark.

Participants were recruited via Prolific (https://www.prolific.com). The experiment took place on a Heroku deployment server via Otree (https://www.otreehub

.com/). Participants completed a consent form and then were explained how to proceed with the experiment. Half of the participants were randomly assigned to start by filling out the conspiracy mentality questionnaire, and then participated in the strategic sophistication game. The remaining half of the participants were exposed to the game before completing the questionnaire. Following the game, participants had to explain the reason for their choice with a one-sentence answer. Finally, the last page provided payoff information to participants before redirecting them to Prolific, where they could collect their payments.

Our main hypothesis in the first study is that there is a positive correlation between the level of strategic sophistication and conspiracy mentality. Additionally, we tested the influence of the order (conspiracy mentality scale before or after the game) on participants' responses to the Money Request Game. If there is no such effect, then we can rule out the possibility that the Conspiracy Mentality Questionnaire itself acted as an exposure to conspiracies. Hence, in this study, we can measure purely the correlation between strategic sophistication and conspiracy mentality. The effect of the exposure to conspiracies was tested in Study 2.

1.2 Study 2

Study 1 drew from Balafoutas et al. (2021), but it did not experimentally manipulate exposure to conspiracy theories and the monetary incentives were different. Study 2 follows more closely the procedures of Balafoutas et al. (2021), the main difference being that the experiment was held online. Study 2 was also preregistered on OSF (https://osf.io/vm67j).

In Study 2, in line with the procedure of Balafoutas et al. (2021), half of the participants watched a video presenting a conspiracy theory, while the other half watched a neutral video. The videos were provided to us in English language with German subtitles by the authors of the original study, and we replaced the German with English subtitles. Both videos were about space programs. In the conspiracy video (which lasts for 6 minutes), various people explain their doubts that the US actually landed on the moon (https://youtu.be/fN8tgPDDfQk). The control video

(of equal duration) is a NASA video explaining a space program (https://youtu.be/fDKUakBRG5Y). The screen displaying the videos also contained two comprehension checks. The questions for the conspiracy video were: "According to one protagonist, how many days Saturn 5 orbited the Earth?" (3, 5, 8, correct answer = 8) and "Who is Bill Kaysing?" (A journalist, An engineer, An astronaut, correct answer = An engineer). The questions for the video concerning NASA's program were: "Where are the astronauts trained to work?" (In a pool, In a void room, In a "no-gravity" zone, correct answer = In a pool) and "Where are the boosters created?" (In Michoud, In Clearfield, At NASA's Kennedy Space Center, correct answer = In Clearfield). If the participant did not answer both questions correctly, they could not access the next page.

Mirroring Study 1, participants completed the Conspiracy Mentality Questionnaire (Bruder et al., 2013). However, we modified the strategic sophistication game to make it closer to the procedures of the original experiment of Balafoutas et al. (2021). Participants could choose a number ranging from 5 to 14 points. The rules are similar to before, with each participant winning the points they bid, and additionally, if one of them bids exactly one point lower than the other, they get an additional 10 points. The points are converted to pounds according to the formula $(Points - 4) * 0.1$. The participants were informed about the conversion rate. The strategic sophistication game took place before the Conspiracy Mentality Questionnaire, so the addition of the questionnaire does not affect the results of our attempt to replicate the original experiment.

Finally, participants completed a manipulativeness questionnaire. This questionnaire consists of 5 questions (Du, Collison, Vize, Miller, & Lynam, 2021): "I think it is important to be charitable to others." (reversed), "I am better than others.", "Being honest all of the time won't lead to success.", "I'm not a particularly sympathetic person.", and "I tend to assume the best about people." (reversed). This questionnaire corresponds to the antagonistic factor of the Machiavellian Personality Scale. Antagonism refers to the personality factor related to manipulation and selfishness that could be related to beliefs in conspiracy theories as well as to strategic behaviours.

Participants were recruited via Prolific (https://www.prolific.com). The experiment took place on a Heroku deployment server via Otree (https://www.otreehub.com/). Participants completed a consent form and then received instructions for the experiment. They first provided their demographics. They then watched the video and answered the comprehension checks. They played the strategic sophistication game, indicated the reason for their choice, filled out the Conspiracy Mentality Questionnaire, and finally completed the Manipulativeness Questionnaire. The last page displayed the amount they won as a result of the game, before redirecting them to Prolific, where they could collect their payments.

Our main hypothesis in the second experiment aims at examining the robustness of the main finding of Balafoutas et al. (2021): the group watching the conspiracy video will exhibit a higher level of strategic sophistication than the group watching the control video. We also ran exploratory analyses to test the type of video influenced participants' conspiracy mentality and manipulativeness. We also examined, as in Study 1, whether there was a positive correlation between the level of strategic sophistication and conspiracy mentality. Finally, we also tested, in an exploratory sense, whether there was a positive correlation between the level of strategic sophistication and manipulativeness.

2 Results

2.1 Study 1

In total, 107 subjects participated in the first study. The average payment to the participants was £3.09. After excluding 10 participants who indicated that they answered randomly,[2] the dataset from study 1 comprised of 97 individuals (Mage = 38.55, SDage = 13.30, 61 women, 35 men, 1 other); of whom 48 played the game before the questionnaire (Mage = 35.64, SDage = 13.29, 31 women, 16 men, 1 other) and 49 who completed the questionnaire first and then played the game (Mage = 41.39, SDage = 12.80, 30 women, 19 men). Cronbach's α, a measure of internal consistency, was

[2] The excluded participants used words like 'Random', 'bot', 'I do not know' to explain the reasons for their choice. Our results are robust to the inclusion of these participants.

Table 1: Distribution of choices in equilibrium and in Study 1

	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Equilibrium (%)	0	0	0	0	0	0	0	40	30	20	10
Actual choices (%)	0	0	0	1	4	14	7	11	25	21	17

equal to 0.86 for the Conspiracy Mentality Questionnaire, so we averaged the items into one conspiracy mentality measure. The average conspiracy mentality measure was 64.29 (SD = 19.14) and the average level of strategic sophistication among all participants was 2.40 (SD = 1.84). The exact distribution of the participants' choices in the strategic sophistication game and the benchmark distribution according to Nash equilibrium can be found in Table 1.

Against our main hypothesis (Preregistered H1), we did not find a significant correlation between conspiracy mentality and the choice at the strategic sophistication game (i.e., level of strategic sophistication), $r(95)$ = -0.04 [-0.24, 0.16], p = 0.69. We then tested the influence of the presentation order and found no difference for conspiracy mentality ($t(92.92)$ = 1.35, p = 0.18, d = 0.27 [-0.13, 0.67]), and the choice at the strategic game ($t(94.95)$ = -0.14, p = 0.89, d = -0.03 [-0.43, 0.37]).

As a robustness check, we ran two secondary analyses, one including all participants, and the other one excluding (in addition to those excluded in the main analysis) seven participants who indicated that they chose a number for the sake of the number, and not because of the rules of the game.[3] These alternative analyses yielded similar results that can be found on the OSF page of the project.

2.2 Study 2

Two hundred and eighteen subjects participated in the second study. The average payment to the participants was £2.61. After excluding 1 participant whose answer was incomplete and 14 participants who indicated that they answered randomly, the dataset from Study 2 comprised of 203 individuals, of whom 98 watched the conspiracy video (Mage = 40.44, SDage = 12.65, 52 women, 46 men) and 105 watched the control

[3] Those who were additionally excluded used the words such as 'the example', 'favourite number', and 'lucky number' in their explanations. In other words, we exclude a participant whenever they choose number for the sake of the number, and not for the outcome it is expected to generate.

Table 2: Descriptives : means (SD)

Variables	Conspiracy Video	Control Video
Strategic level	2.83 (2.43)	3.06 (2.19)
Conspiracy Mentality	6.04 (1.86)	6.01 (1.58)
Manipulativeness	2.27 (0.64)	2.27 (0.55)

Note. n = 98 for the Conspiracy Video, n=105 for the Control Video. The strategic sophistication level goes from 0 (not strategic) to 9. The conspiracy mentality scale ranges from 0 (not certain) to 10 (certain). The manipulativeness scale ranges from 1 (not agree at all) to 5 (completely agree).

Table 3: Distribution of choices in equilibrium and in Study 2

	5	6	7	8	9	10	11	12	13	14
Equilibrium (%)	0	0	0	0	0	0	40	30	20	10
Conspiracy Video (%)	3	3	5	3	5	12	6	25	23	15
Control Video (%)	2	2	3	6	16	11	10	22	18	10

video (Mage = 42.51, SDage = 12.61, 55 women, 50 men). A description of mean values can be found in Table 2. The exact distribution of the participants' choices in the strategic sophistication game and the benchmark distribution according to Nash equilibrium can be found in Table 3.

Cronbach's α for the Conspiracy Mentality Questionnaire was 0.82, we thus averaged the items into one conspiracy mentality measure. Cronbach's α for the Manipulativeness Questionaire was 0.63, which is lower than the typical threshold of 0.70, indicating a lack of reliability. We still decided to average the items for the sake of simplicity and in order to comply to the preregistration.

We first examined the relationship between the level of strategic sophistication, conspiracy mentality, and manipulativeness. Contrary to Study 1, strategic sophistication was modestly correlated to conspiracy mentality (preregistered, $r = 0.17$ [0.04, 0.30], $p = 0.013$). Conspiracy mentality was also correlated to manipulativeness ($r = 0.16$ [0.02, 0.29], $p = 0.02$). However, the manipulativeness scale was not correlated with the strategic level (preregistered, see Table 4).

As Balafoutas et al. (2021) did, we tested the influence of the video on the level of strategic sophistication. Contrary to their results, we did not observe a significant

Table 4: Correlations between strategic level, conspiracy mentality and manipulativeness scale

	Whole sample[1]		Conspiracy Video[2]		Control Video[3]	
	CM	M	CM	M	CM	M
Strategic Level	0.17 [0.04, 0.30]	-0.03 [-0.16, 0.11]	0.20 [-0.00, 0.38]	0.00 [-0.20, 0.20]	0.15 [-0.05, 0.33]	-0.06 [-0.25, 0.13]
Conspiracy Mentality		0.16 [0.02, 0.29]		0.27 [0.08, 0.44]		0.02 [-0.17, 0.21]

Note: $n = 203$ for the Whole sample, $n = 98$ for the Conspiracy Video, n=105 for the Control Video. CM = Conspiracy Mentality, M = Manipulativeness.

effect of the video on the level of strategic sophistication (preregistered, $t(195.04) =$ -0.71, $p = 0.48$, $d =$ -0.10 [-0.38, 0.18]). Results were also non-significant for the effect of the video on conspiracy mentality ($t(191.14) = 0.13$, $p = 0.90$, $d = 0.02$ [-0.26, 0.29]) and on manipulativeness ($t(190.04) =$ -0.11, $p = 0.92$, $d =$ -0.02 [-0.29, 0.26]). A graphical display of our results can be found in Figure 1.

We conducted several robustness checks. Our first two robustness checks were identical to those in Study 1; one included all participants, except the one with incomplete record (n=217), and the other one excluded (on top of the participants excluded in the main analysis) 14 participants who picked a number for the sake of the number (n=189). These analyses produced similar results, which can be found at the OSF page of the project.

In two additional robustness checks, we ran analyses on participants for whom we could credibly assume level-k reasoning. To this end, we excluded all participants who indicated strategic sophistication level 4 or above. The rationale behind this exclusion

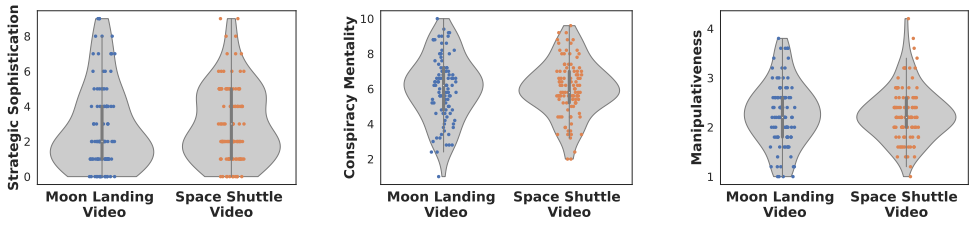

Fig. 1: Comparison of the effects of Conspiracy (Moon Landing) and Control (Space Shuttle) Videos on Strategic Sophistication Level, Conspiracy Mentality and Manipulativeness in the full sample.

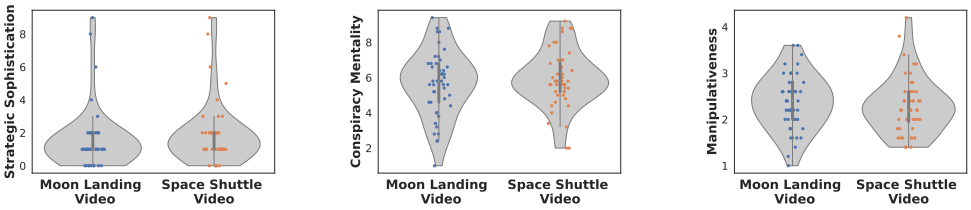

Fig. 2: Comparison of the effects of Conspiracy (Moon Landing) and Control (Space Shuttle) Videos on Strategic Sophistication Level, Conspiracy Mentality and Manipulativeness in the fourth robustness check.

was the argument by Arad and Rubinstein (2012), who claimed that thinking beyond the third iteration in the level-k types of models is extremely rare. Furthermore, they showed that the model including types from level-0 to level-3 fitted their data the best. Therefore, it can be assumed that participants selecting an answer suggesting higher levels of strategic sophistication did not actually engage in level-k thinking (i.e., they picked their number based on other considerations).

In our fourth robustness check, we kept only participants whose explanation explicitly referred to the two key aspects of level-k thinking; they tried to undercut the other player and used the number 14 as the anchor, or they chose 14 and mentioned profit maximization as a justification. We identified 95 such participants and we expected most of them to exhibit strategic sophistication levels between 0 and 3, as we discussed above, hence we expected that the average level of strategic sophistication is lower in the restricted group than in the rest of the sample. We indeed found a significant difference, as the level of strategic sophistication was higher in the second subsample than in the first, $t(199.73) = 7.46$, $p < .001$. We interpret this finding as the possibility that in the second group the observed choice is a more noisy proxy of strategic sophistication, as they might have failed to accurately understand the game. We examined the effect size of conspiracy video in the first subsample of 95 participants and we again failed to find a significant effect $t(92.97) = -0.74$, $p = 0.46$, $d = -0.15$ [-0.55, 0.25]. Results are also non-significant for the conspiracy mentality and the manipulativeness scales (Figure 2).

Finally, we attempted to apply exclusion criteria close to Balafoutas et al. (2021). We excluded one participant with incomplete answers and an additional 14 participants who indicated that their answer was random, as in the main study (n=203). Then we re-coded the choice variables for the participants whose explanation revealed a certain level of strategic sophistication, but their chosen number did not reflect it.[4] Altogether, 5 participants were re-coded following this method, which we transparently reported in the tab "strategic level" of the dataset. However, even after these adjustments, we did not find a meaningful effect of the video on the level of strategic sophistication, $t(196.06) = -0.91$, $p = 0.36$, $d = -0.15$ [-0.42, 0.13].

3 Conclusion

We conducted two preregistered studies on the relationship between conspiracy thinking and strategic sophistication and found very weak effects (unlike prior literature). Several features of our second study can explain our different results relative to the initial study. Key differences are the language and the online environment. The online environment utilizes a different subject pool and changes the subjects' experience in many ways, as it comes with more distractions, lack of given time frame, smaller monetary incentives and lack of opportunity to physically see other subjects. We did not find in the literature comparable online studies which utilize the Money Request Game, therefore we could not analyze the effect of these features further. Moreover, our exclusion and re-coding criteria are likely different from the original study of Balafoutas et al. (2021), which did not record full details on these aspects.

Since it is not possible to determine which of these factors has driven the results, we merely conclude that our study cannot corroborate the original results by Balafoutas et al. (2021). In addition, we tested the hypothesis that a relatively stable tendency to believe in conspiracy theories (i.e., conspiracy mentality) is associated with greater strategic sophistication. Our results were mixed, as the hypothesis was corroborated in Study 2, but not in Study 1.

[4] For example, one participant chose 9 and in the explanation stated: "10 is a number that would likely be chosen, so I chose one less than this". Originally, the level of strategic sophistication for this participant was defined as 14-9=5, so we re-coded their choice as 13, which reflects level-1 thinking.

Conspiracy theories have become a major social phenomenon and are already an active area of research in psychology, sociology, political science, history and other fields (Butter & Knight, 2020). Economics is only starting to study the topic. Conspiracy theorists often argue that they are willing to question the incentives of other decision-makers (Harambam & Aupers, 2017). In other words, they claim for themselves a high level of strategic sophistication. Using an economic measure of strategic sophistication, we found very limited support for this assertion.

Of course, our null results are not conclusive about the (in)existence of a relationship between conspiracy mentality, exposure to conspiracy theories, and strategic sophistication. Our results should be incorporated into future meta-analyses of the phenomenon and as such, it may be viewed as a building block for future knowledge.

Acknowledgments.

- Funding This project has received funding from the European Union's Horizon 2020 Research and innovation Programme under Grant Agreement number: 857636 — SInnoPSis — H2020-WIDESPREAD-2018-2020/H2020-WIDESPREAD-2018-04.
- Authors' contributions • Conceptualization: Erika Dömötör, Adrien Fillon, Zacharias Maniadis, Kenzo Nera; Methodology: Erika Dömötör, Adrien Fillon, Zacharias Maniadis; Formal analysis and investigation: Erika Dömötör, Adrien Fillon; Writing - original draft preparation: Erika Dömötör, Adrien Fillon; Writing - review and editing: Zacharias Maniadis, Kenzo Nera; Funding acquisition: Zacharias Maniadis; Supervision: Zacharias Maniadis.

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Appendix A Instructions for Study 1

PARTICIPANT INFORMATION SHEET

University of Cyprus

RESEARCH PROPOSAL TITLE

Online Surveys in Human Behaviour and Interaction

PRINCIPAL INVESTIGATOR OF THE PROPOSAL/PROJECT YOU ARE INVITED TO PARTICIPATE IN

Professor Zacharias Maniadis

DURATION OF THE PROJECT

Overall duration of project is 4 months.
Each participant is asked to engage online for 10 minutes.

BRIEF DESCRIPTION OF THE PROJECT (OUTLINE THE PROCEDURE AND PURPOSE)

You will participate in a short online survey to examine economic and social decision-making. There will also be a very simple interaction with other participants. The purpose is to study economic and social decision-making.

DETAILS OF ANY RISKS THAT MAY EXIST OR ANY INCONVENIENCE THAT PARTICIPANTS MAY INCUR

No known inconveniences or risks.

DETAILS OF WHAT DATA WILL BE COLLECTED OR GENERATED FOR YOU WITHIN THE PROJECT, WHO WILL HAVE ACCESS TO THEM AND FOR HOW LONG

- The answers from surveys and choices in basic interactions with other participants.
- Demographic data (e.g. Age, Gender, Education, etc.)
- Prolific ID of the participant for bonus payments.

No personal data or other identifying information (names, address, phone numbers, emails, etc.) will be collected. The experiment is confidential but not anonymous. Once participants are paid, the dataset will be anonymized. The final anonymous dataset will be stored for at least 10 years and potentially published in an online public repository.

EXPECTED BENEFIT FOR PARTICIPANTS

Participants will be compensated with a fixed amount of money based on the duration of the questionnaire and a variable amount based on their choices in the basic interaction. Moreover, they will be exposed to actual research, gaining potentially useful academic experience.

EXPECTED BENEFIT FOR RESEARCHERS AND/OR SPONSORS

Collection of data that are relevant for the empirical testing of theories.

SITE AND TOTAL DURATION OF DATA COLLECTION EXPECTED UNDER THIS RESEARCH PROPOSAL

Data will be collected from May-August 2023 with online recruitment. Data will be saved in the safe servers of the University of Cyprus until the relevant papers are published..

DESCRIPTION OF RELEVANT PROCEDURES IN HANDLING THE DATA AND PERSONAL INFORMATION OF PARTICIPANTS WHO CHOOSE TO WITHDRAW FROM THE STUDY PRIOR TO ITS COMPLETION.

We will erase all data from participants that withdraw from the study.

FULL CONTACT DETAILS AND TITLE OF THE PERSON TO WHOM PARTICIPANTS CAN SUBMIT COMPLAINTS OR GRIEVANCES REGARDING THE PROGRAMME THEY PARTICIPATE IN.

Marios Demetriades
Head of Research Support Service of UCY
PO Box 20537, 1678, Cyprus
Phone: +357 22894287

NOTE:
This study has been approved by the **Cyprus National Bioethics Committee**[**CNBC DECISION#2023.01.104**] on 6-Apri-2023.

If you like to have a copy of this PARTICIPANT INFORMATION SHEET, please take a screenshot now.

Consent

- (•) Yes, I have read and understood the information sheet and agree to take part in this research project
- ( ) No, I decided not to take part in this research project

Next

Instructions

Time left to complete this page: **2:33**

Welcome to an experiment about decision-making procedures. Thank you for your participation!

During the experiment, you and other participants will be asked to make decisions. Your decisions, as well as the decisions of other participants will determine your payoff according to the rules explained in what follows. All your decisions and response will be kept anonymous and confidential.

The experiment consists of the following steps:

• A demographic questionnaire

• A belief questionnaire

• A game

Your overall income from the experiment is the sum of:

• Payment for participation of 2,25£

• Payoff from the game

Your payoff from participation depends on the choices of both you and your randomly matched opponent

Next

Democraphics

Please answer the following questions.

What is your age?

25

What is your gender?

Male

Next

I think that...

... many very important things happen in the world, which the public is never informed about.

0% Certainly not	10% extremely unlikely	20% very unlikely	30% unlikely	40% somewhat unlikely	50% Undecided	60% somewhat likely	70% likely	80% very likely	90% extremely likely	100% certain

... politicians usually do not tell us the true motives for their decisions.

0% Certainly not	10% extremely unlikely	20% very unlikely	30% unlikely	40% somewhat unlikely	50% Undecided	60% somewhat likely	70% likely	80% very likely	90% extremely likely	100% certain

... government agencies closely monitor all citizens.

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... events which superficially seem to lack a connection are often the result of secret activities.

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... there are secret organizations that greatly influence political decisions.

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Next

A Game

Time left to complete this page: **2:45**

In this game, you will be randomly and anonymously paired with another player and play a game, in which each of you requests a certain amount of money. This amount of money should be between £0,1 and £1. Each player receives exactly the sum he requested. One of the players receives additional £1, if he requests exactly 0,1 pound less than the other player.

You and the other player make decisions simultaneously and only once, without knowing what the decision of the other player was. The identity of the other player will not be revealed to you, and your identity will not be revealed to him or her as well. You will learn the decision of the other player only at the end of the experiment.

Example 1

If both players request £0,8, both players receive £0,8.

Example 2

If the first player requests £0,7 and the second £0,6, then the first player receives £0,7 and the second 0,6 + 1 = £1,6

Please bid an amount between £0,1 and £1:

Next

Feedback

Please explain why you made the particular choice

Next

Payment

You chose the amount £0.40 and your opponent chose £0.60

Your result is then £0.40.

Next

Appendix B Instructions for Study 2

PARTICIPANT INFORMATION SHEET

University of Cyprus

RESEARCH PROPOSAL TITLE

Online Surveys in Human Behaviour and Interaction

PRINCIPAL INVESTIGATOR OF THE PROPOSAL/PROJECT YOU ARE INVITED TO PARTICIPATE IN

Professor Zacharias Maniadis

DURATION OF THE PROJECT

Overall duration of project is 4 months.
Each participant is asked to engage online for 10 minutes.

BRIEF DESCRIPTION OF THE PROJECT (OUTLINE THE PROCEDURE AND PURPOSE)

You will participate in a short online survey to examine economic and social decision-making. There will also be a very simple interaction with other participants. The purpose is to study economic and social decision-making.

DETAILS OF ANY RISKS THAT MAY EXIST OR ANY INCONVENIENCE THAT PARTICIPANTS MAY INCUR

No known inconveniences or risks.

DETAILS OF WHAT DATA WILL BE COLLECTED OR GENERATED FOR YOU WITHIN THE PROJECT, WHO WILL HAVE ACCESS TO THEM AND FOR HOW LONG

- The answers from surveys and choices in basic interactions with other participants.
- Demographic data (e.g. Age, Gender, Education, etc.)
- Prolific ID of the participant for bonus payments.

No personal data or other identifying information (names, address, phone numbers, emails, etc.) will be collected. The experiment is confidential but not anonymous. Once participants are paid, the dataset will be anonymized. The final anonymous dataset will be stored for at least 10 years and potentially published in an online public repository.

EXPECTED BENEFIT FOR PARTICIPANTS

Participants will be compensated with a fixed amount of money based on the duration of the questionnaire and a variable amount based on their choices in the basic interaction. Moreover, they will be exposed to actual research, gaining potentially useful academic experience.

EXPECTED BENEFIT FOR RESEARCHERS AND/OR SPONSORS

Collection of data that are relevant for the empirical testing of theories.

SITE AND TOTAL DURATION OF DATA COLLECTION EXPECTED UNDER THIS RESEARCH PROPOSAL

Data will be collected from May-August 2023 with online recruitment. Data will be saved in the safe servers of the University of Cyprus until the relevant papers are published..

DESCRIPTION OF RELEVANT PROCEDURES IN HANDLING THE DATA AND PERSONAL INFORMATION OF PARTICIPANTS WHO CHOOSE TO WITHDRAW FROM THE STUDY PRIOR TO ITS COMPLETION.

We will erase all data from participants that withdraw from the study.

FULL CONTACT DETAILS AND TITLE OF THE PERSON TO WHOM PARTICIPANTS CAN SUBMIT COMPLAINTS OR GRIEVANCES REGARDING THE PROGRAMME THEY PARTICIPATE IN.

Marios Demetriades
Head of Research Support Service of UCY
PO Box 20537, 1678, Cyprus
Phone: +357 22894287

NOTE:
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Instructions

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Your payoff from participation depends on the choices of both you and your randomly matched opponent.

Democraphics

Please answer the following questions.

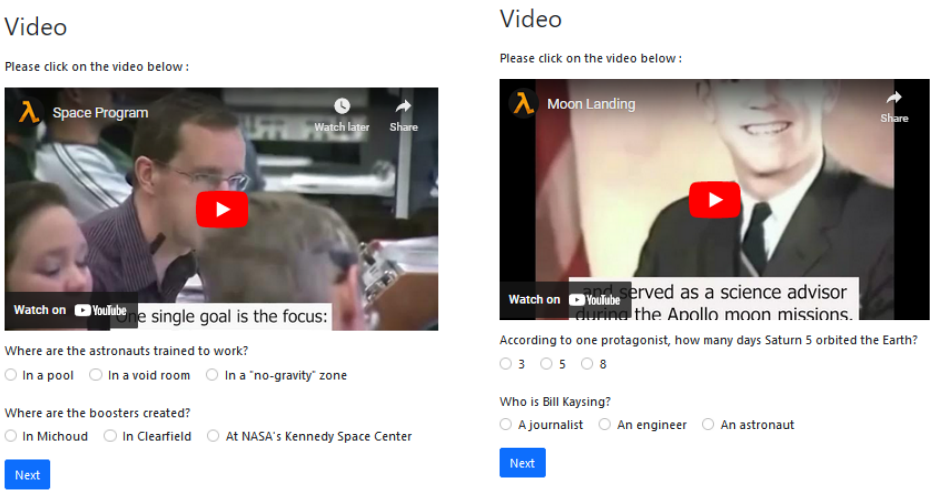
What is your age?

25

What is your gender?

Male

Next



In this game, you will be randomly and anonymously paired with another player and play a game, in which each of you requests a certain amount of points. This amount of points should be between 5 and 14. Each player receives exactly the points he requested. One of the players receives additional 10 points, if he requests exactly one token less than the other player.

You and the other player make decisions simultaneously and only once, without knowing what the decision of the other player was. The identity of the other player will not be revealed to you, and your identity will not be revealed to him or her as well. You will learn the decision of the other player only at the end of the experiment.

Example 1

If both players request 12 points, both players receive 12 points.

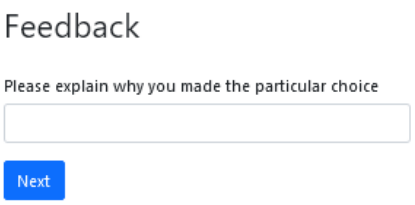
Example 2

If the first player requests 7 points and the second 6 points, then the first player receives 7 points and the second 6 + 10 = 16 points.

Finally, the points will be transformed to pounds. 5 points will be transformed to £0.1 and any additional point will increase your payoff by £0.1. For example, 6 points will be transformed to £0.2, 14 points will be transformed to £1, and 23 points will be transformed to £1.9.

Please bid an amount between 5 and 14 points:

Next



I think that...

I think it is important to be charitable to others.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
○	○	○	○	○

I am better than others.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
○	○	○	○	○

Being honest all of the time won't lead to success.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
○	○	○	○	○

I'm not a particularly sympathetic person.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
○	○	○	○	○

I tend to assume the best about people.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
○	○	○	○	○

Next

I think that...

... many very important things happen in the world, which the public is never informed about.

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Next

Payment

You chose the amount 11 points and your opponent chose 9 points.

Your payoff from the game is then £0.70.

Next