Q1 Screening Questions

3 Points

Q1.1 Will your study:

1 Point

1. Involve research,
2. use human subjects as defined by the federal regulations at 45 CFR 46.102?

- (●) Yes
- ( ) No

Q1.2 Does the proposed research involve deception, for example, through provision of misinformation, withholding information, etc.? (NOTE: Withholding the full hypothesis does not constitute deception.)

1 Point

- (●) Yes
- ( ) No

Q1.3 Does any part of your project present more than minimal risk to subjects?

1 Point

*Minimal risk means that the probability and magnitude of harm of discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

- ○ Yes
- ◉ No

Q2 Research Personel

2 Points

Q2.1 Add all engaged NYU research personnel (group members) to this section.

1 Point

Kevin Zhang (kz519), Charlie Thomas (cht327)

Q2.2 Please describe what role all personnel will have on the project. Include the name(s) and responsibilities for each person. When describing responsibilities, do not use nouns or titles, e.g., PI, researcher. Instead, use action statements, e.g., obtain consent, distribute and collect surveys, analyze identifiable data.

1 Point

Kevin - obtain approval, apply for IRB approval, conduct write-up and experiment notes, collate a roster of subjects, obtain consent from subjects, proctor the experiment, provide after-experiment debrief, analyze data, remove subject identifiers, write up report
Charlie - obtain approval, develop GUI interface for experiment, debug test, collate a roster of subjects, obtain consent from subjects, proctor the experiment, provide after-experiment debrief, analyze data, remove subject identifiers, write up report

Q3 Project Information

3 Points

Q3.1 Project TItle
1 Point

Shall We Play a Game: Studying Human & Ransomware Interaction (Experiment name for subjects will be: Shall We Play a Game: Human Economics in the Security Space)

Q3.2 Briefly summarize the purpose and procedures of the proposed research using non-technical language that can be readily understood by someone outside the discipline. Use complete sentences (limit 300 words).
1 Point

Our experiment's purpose is to better understand the underlying human interaction and issues regarding ransomware attacks (where an attack may steal and hold ransom data from a defender). We will conduct this experiment through a mock game where a player is attempting to maximize their economic profit, while the proctor of the experiment/the attacker will be giving prompts.

Q3.3 Will any research procedures be conducted with participants located outside the United States?
1 Point

- ○ Yes
- ◉ No

Q4 International Research
3 Points

Skip if you answered No to 3.3

Q4.1 Are the procedures conducted in non-US countries conducted exclusively online or on the phone?
1 Point

E.g., online surveys, interviews via video conferencing, phone surveys

- ○ Yes
- ◉ No

Q4.2 In what countries/regions (cities, towns, etc.) will participants be located?
1 Point

For online/phone procedures that do not target specific countries and it's unknown exactly which ones may be included, then please provide general descriptions of where participants may be located (e.g., Europe, Central America) and explain why it's unknown exactly which countries will be included.

New York City, NY, potentially online. However if the game is held online, the distribution most likely will be individuals in the New York Metro area with NYU NetIDs.

Q4.3 Given the nature of the research and information collected from participants, will any countries/locations be included in which there may be concerns regarding privacy or confidentiality for online or phone procedures?
1 Point

For instance, an online study addressing sensitive political topics in a country that conducts mass surveillance of the Internet.

- ○ Yes
- ◉ No

Q5 Data Collection

8 Points

Q5.1 Will you be conducting **Surveys, questionnaires, interviews, or focus groups**

1 Point

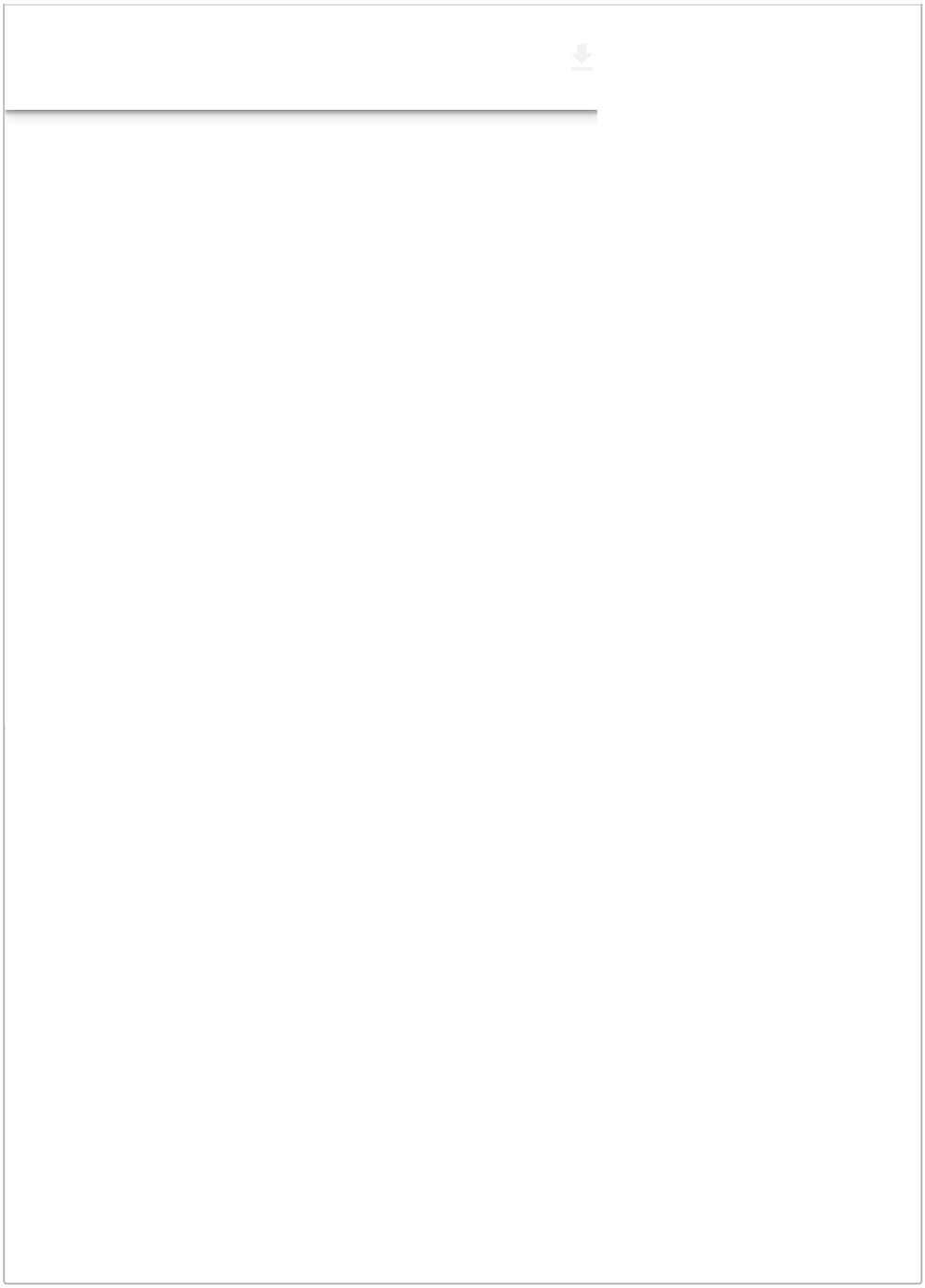
◉ Yes

☑ one-on-one

☐ group

Please submit a word document or PDF to include text of all proposed questions.

▾ Shall We Play a Game_ Human Economics in the Security Space .pdf Download



○ No

Q5.2 Will you be doing **internet data collection, e.g., online survey**
1 Point

◉ Yes

Survey hosting sites used:

- [ ] Qualtrics
- [ ] REDCap
- [x] Google Forms
- [ ] Other site:

URL for survey:

https://forms.gle/RSLuSNxd2wfDPcgm7

- (●) No

Q5.3 Will you be engaging in observation of participants (including field notes)
1 Point

- ( ) Yes

Please describe the procedures for the observation of participants, e.g., who, what, where, when, and how.

- (●) No

Q5.4 Will you be collecting recordings of participants (video, image, audio)**
1 Point

○ Yes

☐ Video

☐ Image (Photo)

☐ Audio

◉ No

Q5.5 Will you be collecting data from biological specimens for research purposes, e.g., blood, saliva, hair, nail clippings or Devices, e.g., MRI, eye-tracking, EEG, galvonic skin response sensors **

1 Point

○ Yes

◉ No

Q5.6 Will you be collecting data from virtual reality devices

1 Point

○ Yes

What is the make and model of the virtual reality device(s) that will be used?

Attach a copy of the health and safety warning from the virtual reality device manufacturer(s).

No files uploaded

Describe the procedures for minimizing risks to participants while using the virtual reality device:
E.g., keeping research space free of tripping objects, having a researcher maintain an appropriate distance to assist if needed.

N/A - no virtual reality device will be used

- [x] No

Q5.7 Will you be taste testing?
1 Point

- [ ] Yes
- [x] No

Q5.8 if you will be taste testing: Will you screen for allergies
1 Point

- [ ] Yes
- [x] No

Q6 Project Information II
4 Points

Q6.1 Will you be conducting secondary analysis of data?
1 Point

Secondary analysis of data includes the use of information that is originally created for purposes other than the proposed research, e.g.,

educational records/grades, medical records, posts on Internet message boards or social media, existing research data from another study.

- ○ Yes
- ◉ No

Q6.2 Will data that may be clinically relevant to participants be collected?

1 Point

Clinically relevant data includes individual results about which participants may wish to be informed, e.g., diagnostic assessment results, DNA sequencing, blood glucose levels, incidental findings from MRI, IQ test scores.

- ○ Yes
- ◉ No

Q6.3 Interventions/Clinical Treatments and Manipulations/Tasks

1 Point

- [ ] Interventions/Clinical treatments will be administered for research purposes. *Interventions/clinical treatments include procedures intended to modify a person's physiological, cognitive, or behavioral processes, e.g., mental health therapy, exercise regimens, diet plans, job attendance interventions.*

- [x] Manipulations/Tasks administered for research purposes. *Manipulations/tasks include procedures meant to elicit cognitive, physiological, or behavioral responses, e.g., playing games, group decision-making activities, controlling environmental light or sounds, physical exercise activities.*

- [ ] No interventions/treatments/manipulations/tasks will be administered for research purposes.

Q6.4 Description of Study Procedures

1 Point

Describe the study's methodology using lay language, including, if applicable:

- exactly what the participants will be expected to do at each phase of the project,
- how much time each activity will require and the total time for participation,
- where each study procedure will occur (e.g., online, participant homes, NYU labs, public spaces like parks or restaurants, classrooms)
- how materials such as surveys will be distributed and returned, e.g., online, in-person, postal mail, email, and
  how the researcher will interact with and/or observe the participants.

There are three main sections of this study 1) Scheduling Experiment, 2) Experiment, 3) Exit Interview.

1) Participants will schedule when they will take the experiment

a) Participants will be recruited over email or respond to fliers/newsletters

b) In either case, participants will fill out a Google Form that determines eligibility (matriculated NYU student, older than 18). This information will be used to schedule either a virtual or in-person proctoring of the experiment.

c) This can occur anywhere if participants respond to fliers or email. If they hear about the study from word-of-mouth while an in-person study is taking place (e.g. walking by the test booth at an NYU facility), this could occur on campus at NYU Washington Square or NYU Tandon Metrotech.

2) Participants will take part in the experiment

a) In-Person: Participants will come to a scheduled in-person proctoring

i) In-person sessions will always take place in an NYU building that requires NYU ID access to enter

ii) To verify the individual is correct, we will ask them to show their NYU ID and match their Net ID with the one on the email. This is the only time where PII will be used.

iii) When recording the experiment, participants will be given a random participant number from then on to anonymize them.

b) Online: Participants will schedule an online Zoom proctoring

i) Online sessions will take place in a Zoom call - each link will only be shared with and individual who has responded to outreach emails/the intake and scheduling process.

ii) This is the only time where PII will be used. Participants will be given a random participant number in the Zoom call, and will be asked to enter such on all further experiment material to anonymize them.

c) Both Online and In-person participants will go through the experiment. There are

several stages of the experiment:

i) The first session will consist of the participant to play a text-based game that centers around maximizing personal economics. This is usually portrayed as being a business decision maker for a company.

1) "You're the chief technical officer of Little Caligula's, a large pizza chain. There are 5,000 locations, each serving an average of 600 pizzas a day for a grand total of $24,000,000. Mamma mia, that's a lot of pizza. (reply to continue)"

ii) We will provide prompts to the individual offering them investment options that can either net in an increase in their overall accumulated wealth (in our ransomware example, this would be matched to the price of valuable data), or an increase in an income generation tool (in our ransomware example, this is matched to the expected loss of income from a ransomware attack).

2) "You have the option to purchase brand new, top of the line "Corinthian" pizza ovens. These will replace the ailing brick ovens that you have in most of your brick and mortar shops (no pun intended). Would you like to invest in this new equipment? (reply invest to spend $500,000) (reply hold to decline the offer)." This could net in a decrease of $500,000 right now, but an increase to revenue generation (+income)

iii) At some point during the experiment, a "ransomware" attack will occur when an asset or their income generation (sensitive data or loss of income due to data being held hostage) will occur. At this point, there will continue to be options to invest and divest their funds; however with significant

decrease in liquidity of their
funds, they may not be able to accumulate enough cash by the end of the game.
We intend to represent reputational damage (loss of data causes customers to
stop supporting your product) or decrease in functionality of the company as
negatives to assets or income.
2) Half of the orders are placed via the website, and the other half by phone.
Unfortunately, an infamous hacking group called Praetorian Guard just
compromised your website littlecaligulas.com and took down your servers.
Without the website, the number of orders has dropped by thirty percent,
and your most loyal customers are mad they have to talk on the phone to
place an order. (reply okay to continue)"
iii) Participants will be given many opportunities to make decisions to pay the
ransom. The study will evaluate 1) if they pay the ransom 2) at what stage they pay
the ransom 3) does ransom existing impact their normal decision making ability 4)
do their objectives change
3) Participants will conduct an exit interview/debriefing
a) Participants will be debriefed with the following debrief objectives in mind:
i) inform participants of the true goals of the research study
ii) remove any effects of false information
iii) educate participants about the research process and why deception is sometimes
necessary
iv) make participants feel important in the research process.
b) We will collect some basic sentiments from the experiment, consisting of their reaction
before and after the ransomware was released.
c) We will wrap up the experiment by letting the participant know that their data will be

safeguarded and kept confidential.
4) During the entire process, researchers will make minimal notes on the process. The idea
is that the choices made during the game and the subsequent exit interview responses
should provide the bulk of the data regarding the game.

Q7 Participants & Recruitment
7 Points

Q7.1 Participant Populations
1 Point

Specify the participant population(s) to be included (check ALL that apply):
For this question, only answer the subquestions if you checked the population type (**bolded**) in the section. Sections are denoted by lines.

For example if you do not check "Children" you do not have to answer the age ranges, or if you did not check either *Individuals with impaired decision-making capacity, e.g., participants with dementia* or *Individuals who are economically or educationally disadvantaged,* you do not have to describe how you would protect this population

- [x] **Adults**

Specify age range (in years):

- [x] 18 - 24
- [x] 25 - 50
- [ ] 51 - 64
- [ ] 65 - 75
- [ ] 75 +

- [ ] **Children (includes students under 18 years old)**

Specify age range (in years):

- [ ] 0 - 1
- [ ] 2 - 5
- [ ] 6 - 12
- [ ] 13 - 17

- [x] **Students**
- [x] NYU students
- [ ] Non NYU Students
- [ ] NYC Department of Education schools

- [ ] **Subject Pools**
- [ ] Student pool, i.e., students will receive course credit
- [ ] Paid pool

- [ ] **Individuals with impaired decision-making capacity, e.g., participants with dementia**
- [ ] **Individuals who are economically or educationally disadvantaged**

Please describe how you would protect this population.

N/A

- [ ] **Amazon Mechanical Turk Workers**

Will Amazon Mechanical Turk Worker IDs be linked to the data at any time?
Select Yes if participants are asked for the Worker ID on the survey or if a code is given to each participant to enter in MTurk, since the data will be linked to Worker IDs via the code/timestamp.

- ○ Yes
- ◉ No

Under Amazon Mechanical Turk's Acceptable Use Policy, Requesters are prohibited from "Collecting personally identifiable information (e.g., don't ask Workers for their email address or phone number), or otherwise attempting to derive any personally identifiable information about Workers. " Please confirm that no personally identifiable information will be collected from MTurk Workers (other than Worker IDs -- see question above).

- ○ Yes
- ◉ No

☐ **Other population**

Describe the other population and, if applicable, procedures for protecting this population.

N/A

Q7.2 Total number of participants:

1 Point

Provide the maximum total number of participants (or number of participant records, specimens, etc.) for whom you are seeking NYU approval. The number of participants is defined as the number of individuals who agree to participate, i.e., those who provide consent or whose records are accessed, including those who complete the screening but are deemed ineligible or do not complete the study. Please overestimate the number of participants to avoid over enrollment.

400 Students maximum. Whatever number of participants we obtain, we will divide into 4 categories, which will take different versions of the game.

Q7.3 What are the criteria for inclusion for potential participants, e.g. age ranges, country of birth or native language, medical status, grade in school, membership in a particular organization, marital or parental status?

1 Point

Inclusion criteria will be individuals who are attending NYU for either undergraduate or graduate education. We will run the experiment both in person and online. Additionally, the experiment will be offered in English, with the assumption that students at NYU have a reasonable grasp of English (as English is a requirement in many course of study curricula).

Q7.4 What are the criteria for exclusion for potential participants, e.g. age ranges, country of birth or native language, medical status, grade in school, membership in a particular organization, marital or parental status?
1 Point

Exclusion criteria will namely concern students who are not currently students at NYU. This includes all undergraduate students and graduate students (both Master's and PhD). Degree of study and/or major are not considered. Additionally, those who do not have time to complete the full experiment from beginning to end will not be considered.

Q7.5 Will participants be screened to determine eligibility?
1 Point

- (●) Yes
- ( ) No

Q7.6 Participant Identification, Recruitment, & Selection
1 Point

Describe how potential participants will be identified, e.g., advertising, individuals known to investigator, record review. Use of one's own

students or employees is strongly discouraged. Explain how investigator(s) will gain access to the population, as applicable.

Participants will be screened through access to an NYU NetID. NYU NetIDs are considered personal identifying information, so our study will not collect these ID numbers. Rather, we will use them to verify NYU affiliation, so that the groups can access the experiment. Additionally, in-person visual verification of a participant's physical NYU ID may suffice.

Investigators will have access to this group as both investigators are current NYU students with access to NetIDs.

Describe the recruitment process, including the setting in which recruitment will take place and the mechanisms used to recruit participants. Explain how the process respects potential participants' privacy and how it will minimize coercion or undue influence. Attach copies of proposed recruitment materials below, e.g., ads, flyers, website postings, recruitment letters, videos/digital recordings and oral/written scripts.

Recruitment of participants will take place a number of different ways:

1) In-person boothing will consist of the investigators setting up a stall in an NYU academic building with decent through traffic. The booth will have our experiment set up on a computer or device (or the ability to be run on a mobile device). Word-of-mouth promotion and fliers will be placed around campus, along with live recruitment at the booths. As this experiment can be conducted on personal devices, no interview rooms or equipment needs to necessarily be utilized.

2) Online recruitment will be conducted through a series of fliers, but also newsletters and emails sent to different academic groups.

Note:

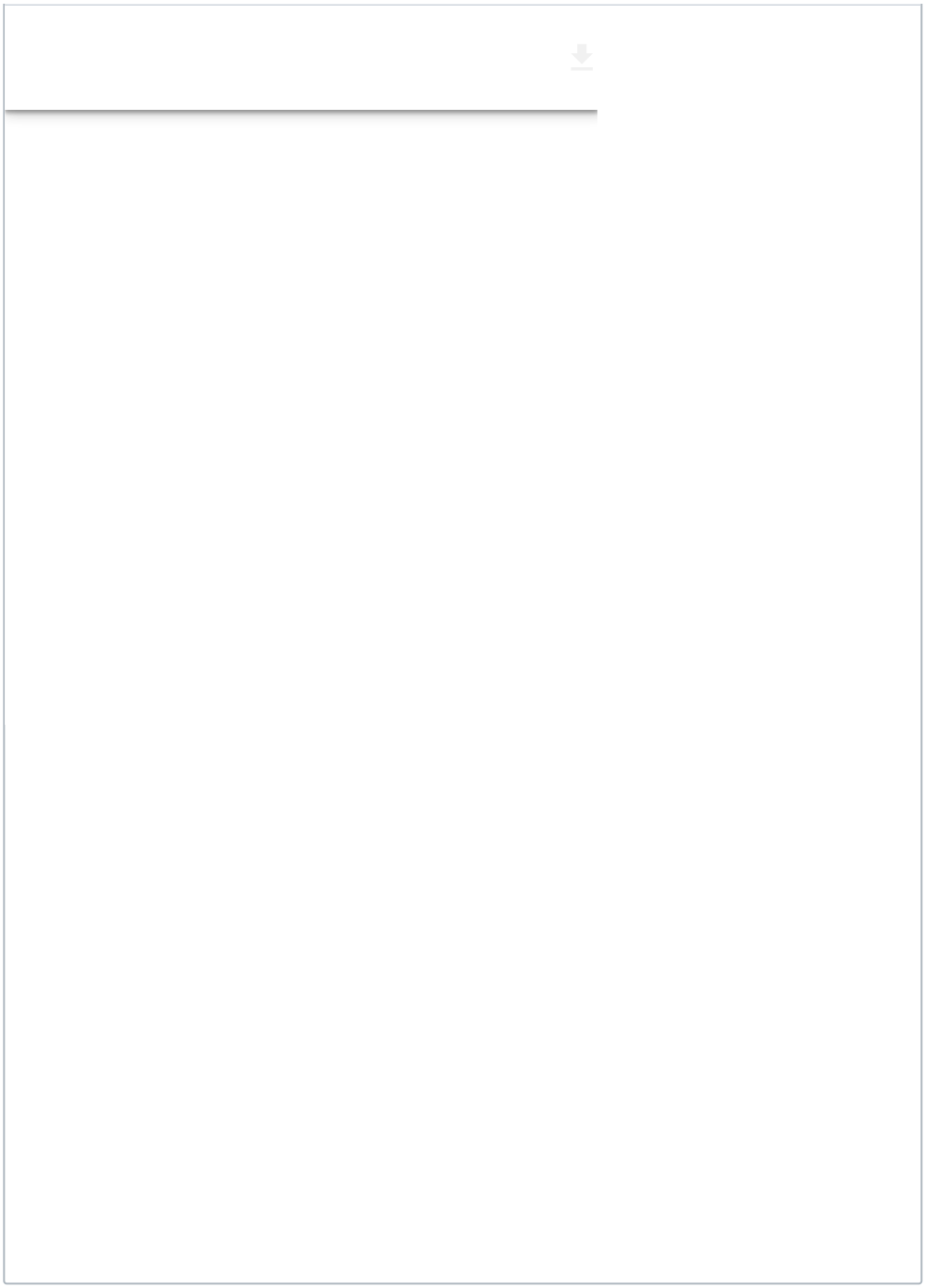
Coercion and undue influence are unlikely as the test environments will be familiar to the individuals taking the test (or

on a communal terminal). Private information will not be retained and will only serve the purpose of verifying NYU student status.

Recruitment Materials
MUST BE PDF DOCUMENT WITH ONE INCH MARGIN AT BOTTOM OF EACH PAGE
Upload copies of proposed recruitment materials, e.g., flyers, social media postings, email/letter text, oral scripts, Mechanical Turk HIT descriptions, study descriptions on Sona.

If no recruitment materials will be used, then upload a document explaining why not (e..g., study involves only secondary analysis of data). Note that almost all studies in which participants will actively complete procedures (surveys, interviews, etc.) require recruitment materials.

▾ Zhang & Thomas All Recruitment Material - 1 inch.pdf Download



Q7.7 Will participants receive compensation for participating in the research , e.g., free services, cash payments, gift certificates, parking, classroom credit, travel reimbursement?

1 Point

Compensation plans should be pro-rated, i.e., not contingent upon study completion, and should consider participation withdrawals, as applicable.

Raffles/drawings cannot be used to compensate participants, as New York State law is ambiguous regarding the use of raffles/drawings for research purposes. Do not include raffles/drawings as a mechanism for compensating research participants.

- ○ Yes
- ◉ No

if yes:
Describe the compensation, including the amount, form (e.g., cash, gift cards), and payment schedule (e.g., after each data collection session, after all study procedures are completed). Please explain how the participants will be compensated should they withdraw from the study before completion.
If gift cards will be used, then please explicitly state the specific retailer(s)/company(s), e.g., Visa debit card, Amazon gift card, Starbucks gift card. If applicable, this information should also be included in the recruitment material(s) and consent/assent/parental permission form(s).

N/A - no compensation

Describe the processes/mechanism for compensating participants. Address each of the following:

- What information, if any, will be collected to provide payment (names, email address, physical address, etc.)? If applicable, will identifiable information collected for payment purposes be linked to study data at anytime (e.g., at the end of a survey or on a separate survey linked via timestamp, on recordings of interviews)? Will any information about participants be given to somebody other than the researchers for payment purposes (e.g., NYU financial operations staff)?
- How will compensation be provided to participants (e.g., virtual gift cards emailed to participants, physical gift cards mailed to participants, given in-person)?
- At what time will participants receive compensation (e.g., immediately after data collection session, a few days after session, a few weeks after session)? If compensation will not be given

immediately after data collection session, then please justify why not?

N/A - no compensation

Q8 Consent and Privacy

6 Points

- ○ Yes
- ○ No

dont answer: broken

Q8.1

1 Point

Will you obtain informed consent from all participants or their legally authorized representatives?
Select 'Yes' if participants will be presented with consent language, but they will not sign the consent form (e.g., online surveys). This procedure constitutes obtaining consent even if the participants do not sign a form.

- ◉ Yes
- ○ No

Q8.2 Indicate the consent process(es) and document(s) to be used in the study. Provide copies of documents, as applicable.

1 Point

Please use the language and templates available under Forms & Guidance or the Consent Form Generator. Do not use old templates or examples of consent forms. Departmental/school subject pools have their own consent templates; please contact the pool administrator for

these templates.
https://www.nyu.edu/research/resources-and-support-offices/getting-started-withyourresearch/human-subjects-research/forms-guidance.html

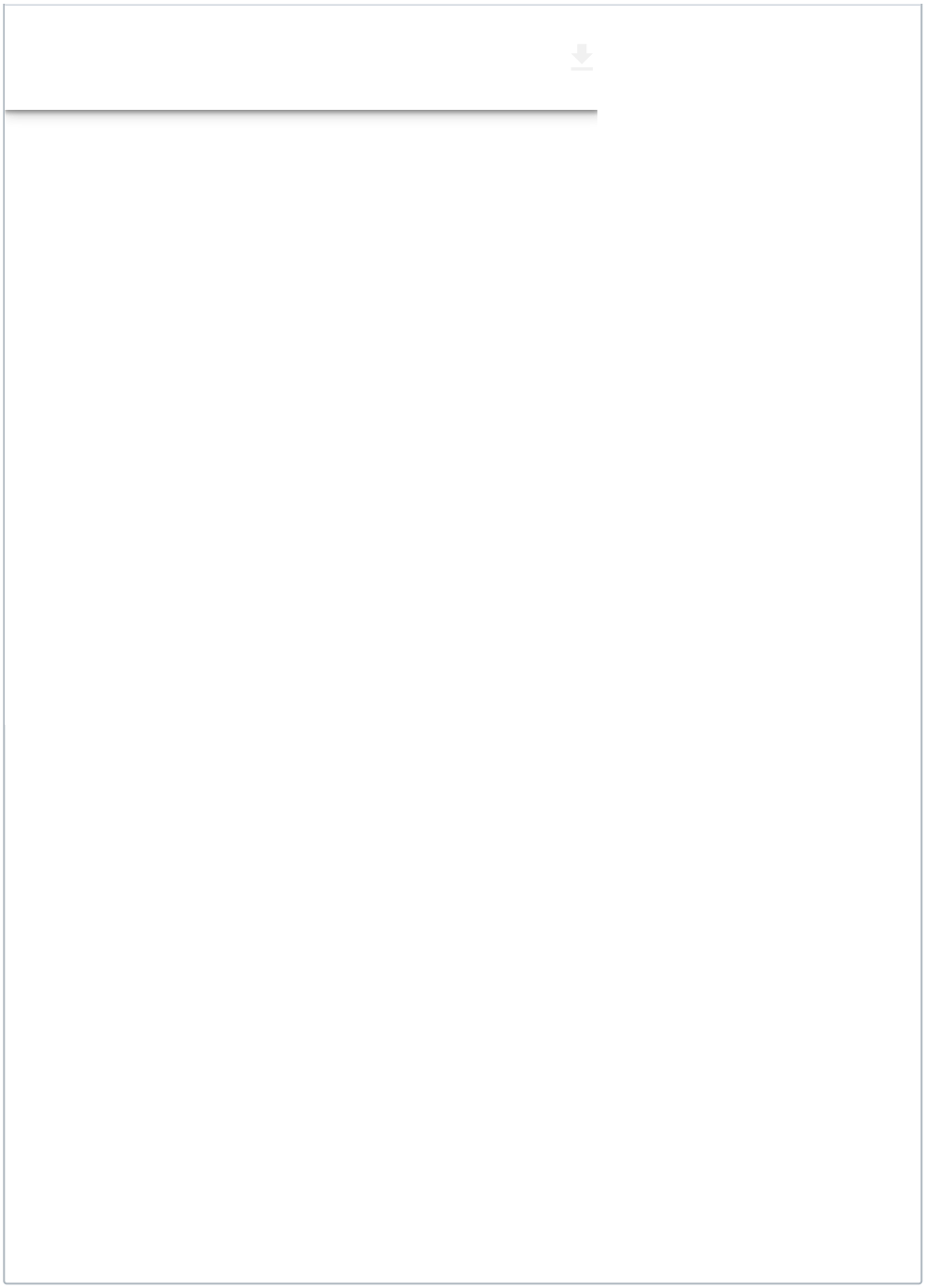
- [x] Informed Consent (for adults age 18+)
- [ ] Parental/Guardian Permission
- [ ] Assent (for minors age 12 - 17 and persons incapable of consenting)
- [ ] Oral Assent (for minors under age 12)
- [ ] Consent will not be obtained for all participants.

- [x] Signed form
- [ ] Verbal script
- [x] Online
- [ ] Unsigned

---

*required
Consent Form(s)
Attach ALL adult consent or oral assent documents.
* MUST BE PDF DOCUMENTS WITH ONE INCH MARGIN AT BOTTOM OF EACH PAGE*

▾ Zhang & Thomas Study Consent Form.pdf Download



Q8.3 Are you applying for a waiver of documentation of consent or parental permission (i.e., unsigned)?
1 Point

○ Yes

IRB may waive the requirement for written documentation of consent/parental permission but still require that consent/parental

permission be obtained if either of the following conditions exist. Select the condition(s) that applies:

- [ ] The only record linking the participant and the research would be the consent/parental permission form and the principle risk of the research would be the potential harm from a breach of confidentiality. Each participant or parent (or legally authorized representative) must be asked whether they want documentation linking the participant with the research, and the participant or parent's wishes will govern.
- [ ] The research involves no more than minimal risk of harm to participants and includes no procedures for which written consent/parental permission is normally required outside the research context.
- [ ] The participants or parents are members of a distinct cultural group or community in which signing forms is not the norm, the research presents no more than minimal risk of harm to participants, and there is an appropriate alternative mechanism for documenting that informed consent/parental permission was obtained.

◉ No

Q8.4 Describe the procedures for obtaining consent/assent/parental permission, including when, where, and how it will be obtained.

1 Point

We will be obtaining consent through the consent form (attached in previous question 8.2). Before running the experiment, participants must fill out and sign the consent form. For in-person experiments, we will collect the consent form immediately before the test is administered. In online tests, we will have the candidates fill out the consent form after they have indicated the time in which they would like to complete the test. We will

guarantee that candidates will not see the test material prior to filling out the consent form.

Q8.5 Describe how participants, parents, and/or their legally authorized representatives will be provided sufficient opportunity (e.g., waiting period, if any) to consider participation and how the procedures for obtaining consent/assent/parental permission minimize the possibility of coercion or undue influence.

1 Point

For virtual proctoring of the experiment, participants should have something around one week to consent to taking part in the test. If participants do not wish to take part, there is not penalty - we will simply remove any data related to them from the test data.

For in-person proctoring, we will make sure everyone has adequate time to make a decision whether to take part of the project. We will have both physical and virtual copies of the consent form for individuals to fill out at the booth. For the participants who indicate they wish to do an in-person experiment via our recruiting emails, we will require a completed consent form prior to arriving at the test location. Additionally, for those who hear of our experiment from word-of-mouth or while we are boothing, we will let them know of other times and availabilities where they may return and complete the experiment. This should give fair opportunity to all participants.

Q8.6 Describe the provisions to protect the privacy interests of the participants.

1 Point

For instance, describe the circumstances under which information will be obtained (e.g., at a persons home, in a public setting, via an existing data set/records, etc.) and the nature of the information, taking into account factors that may influence participants' expectations of

privacy (e.g., age, gender, ethnicity, organizational affiliation, etc.). Note that privacy refers to individuals' desires to control who has access to them and to their private information. Important considerations for protecting individuals' privacy include the methods used to recruit potential participants, the settings in which information will be collected, and the appropriateness of the person(s) collecting or accessing the information.

Data will only be obtained in two settings: 1) online via a Zoom call/online survey where the only individuals involved are the investigators and the participants (participants are able to personally choose where they may take the test - only requirement is to have a space that they can concentrate on the task individually) 2) in-person at a NYU building. These NYU buildings are restricted access only to NYU individuals. We will create a space where these individuals will not be disturbed for the duration of the test.

For both situations, participants will be conducting the experiment individually. To be considerate of privacy, any in-person participant may switch to an online proctor session of the experiment, so that they can better control their own environment.

Q9 Data Confidentiality & Risks and Benefits

2 Points

Q9.1 Explain how information is being handled, including storage, security measures (as necessary), and who will have access to the information. Include storage security procedures for both electronic and hard copy records.

1 Point

There are four stages of information handling. At all stages, only electronic data will be retained. When physical copies of consent forms are signed, we will scan them to create electronic copies, and shred them properly through an industrial grade shredder.

1) Scheduling Experiment and Recruitment -
Storage: NetIDs will be stored only for the purpose of email and scheduling of the experiment
Security: Data will exist on Google Forms, where only the principal investigators have access.
Access: Only the principal investigators have access to data. Participants might have access to their own data if saved locally, but we have set the Google Forms to not allow receipts.

2) Experiment
Storage: Choices from the experiment will be stored and paired with participant IDs; however, these cannot be linked to any PII.
Security: Data will be masked due to participant IDs, but also the data collected from the experiment will be added to a secure Google Drive folder in the form of a .csv or Excel file (depending on number of participants).
Access: Only the principal investigators will have access to the back end data.

3) Exit Interview
Storage: Similar to the experiment, but will be stored with participant IDs.
Security: Data will be uploaded to a private Google Drive folder.
Access: Only the principal investigators will have access to the exit interview information.

4) Analysis of Data
Storage: During data analysis all data will either be stored on the Google Drive or on investigators' personal devices. These devices are all password protected and kept under lock and key. Additionally, data is anonymized, so participants would not be able to be tracked from the data provided.
Security: Data will not be release prior to the final product, and individuals will not be quoted based on their interview responses. The idea is that individuals would not be able to be identified. Data will also be secured in Google Drive.
Access: Only the principal investigators will have access to the exit interview information. When analysis is completed and the data is finally published, checks will be conducted to make sure no identifiable data is found.

Q9.2 Will personally identifiable information be linked to the research data at any time?

1 Point

Examples of personally identifiable information are names, contact information, and demographic information that may be combined to identify an individual (e.g., combining name of employer, age, and gender). Select Yes if personally identifiable information will be linked to data via codes.

◉ Yes

Please explain:

- what identifiers or potentially identifiable information will be linked to the data (e.g., names, contact information, demographic information that may be combined to identify an individual) and
- why identifiable data must be collected (e.g., to link individual responses for pre- and post-surveys).

○ No

Q10 Indicate what will happen to the identifiable data at the end of the study.

3 Points

Research related records should be retained for a period of at least three years after the research has been completed (e.g., no further data collection, long term follow-up, re-contact, or analysis of identifiable/coded data). For federally-sponsored projects, research records must be retained for a period of at least 3 years after the final expenditures report has been filed, accepted, and approved. Other sponsors may have different requirements or time frames. Please review your award agreement for relevant terms and conditions.

Q10.1

1 Point

- [x] Identifiers permanently removed from the data and destroyed (de-identified).

Describe the procedures for de-identifying the data.

We will only retain NetIDs for the purpose of verifying NYU matriculation. As the study only involves NYU students, the PII will be discarded as soon as the experiment takes place - all participants are given a randomized number that has no connection to their NetID or order in which they conduct the experiment.

Afterwards, choices retained during the experiment and exit interview data will only be tied to the randomized participant number.

- [ ] Identifiable/coded (linked) data are retained.

Q10.2 Will de-identified versions of the data be used for future research, shared with other researchers, or placed in a data repository?

1 Point

Many funding agencies and journals require that de-identified data be placed in a data repository or available for future research.

- [ ] Yes, de-identified data may be used for future research, shared with other researchers, or placed in a data repository.

If applicable, the following text must be in the consent language: "Information not containing identifiers may be used in future research, shared with other researchers, or placed in a data repository without your additional consent."

- [x] No, data will not be used for future research.

Q10.3 Will audio or video recordings that may include identifiers be transcribed by non-research personnel (e.g., transcription company)?
1 Point

○ Yes

Upload a completed confidentiality agreement to be signed by the transcriber (a signed copy is not required at this time, but, if applicable, may be requested in the future) or, if using a company or software, documentation of its confidentiality procedures (e.g, PDF of information from its website).

No files uploaded

◉ No

Q11 European Union General Data Protection Regulation
7 Points

○ Yes

○ No

dont answer: broken

Q11.1
1 Point

Will data be obtained from participants while they are in the European Union (EU) or the European Economic Area (EEA), including data collected on the Internet, OR will data be processed by an organization established in the EU or EEA, such as data transferred to EU-based researchers?

Select No if all data will be collected from participants while they are outside the EU/EEA and the data are not processed by an EU/EEA

organization, e.g., data collected from EU resident who is an NYU student in NYC.

○ Yes

◉ No

if No skip the rest of question 11

Q11.2 Will the data obtained from participants in the EU/EEA or processed by an EU/EEA organization be identifiable?

1 Point

Identifiable information includes, but is not limited to, one of the following:

- names, including those of relatives or acquaintances
- address (including any geographic location containing fewer than 20,000 people, such as town, village, etc.)
- all elements of dates (except years) that directly relate to an individual (e.g., birth date, graduate date) and all ages over 89
- telephone numbers and fax numbers
- vehicle identifiers and serial numbers, including license plate numbers
- device identifiers and serial numbers
- email addresses
- national identification number (e.g., social security number)
- web universal resource locators (URLs)
- internet protocol addresses
- medical or educational record numbers
- biometric identifiers, including finger and voice prints
- social media account information
- photographs containing information that could potentially identify an individual (e.g., face, tattoos, markings)
- any other unique identifying number, characteristic, or code
- any other information that could be used alone or in combination with other information to identify an individual

- ○ Yes
- ◉ No

Q11.3 If using Qualtrics to collect data from participants in the EU/EEA, will the Anonymize Response option be selected to prevent Internet Protocol (IP) addresses from being collected?

1 Point

Under GDPR, IP addresses are considered identifiable. In Qualtrics, the Anonymize Response option must be selected in order for IP addresses to not be collected and for the data to be anonymous, as long as no other identifying information is being collected.

- ○ Yes, the Anonymize Response option will be used in Qualtrics (i..e, IP addresses will NOT be collected).
- ○ No, the Anonymize Response option will not be used in Qualtrics (i.e., IP address will be collected).
- ◉ Not applicable - Qualtrics will not be used to collect data from participants in the EU/EEA.

Q11.4 Will "special categories" of data be collected from participants in the EU/EEA?

1 Point

The GDPR considers the following information to be “special categories" of data:
Data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership
Genetic or biometric data
Data concerning health, sex life, or sexual orientation

- ○ Yes
- ◉ No

Q11.5

1 Point

Participants have the following rights under the EU GDPR:
To request access to personally identifiable information
To request correction of any information that is inaccurate or incomplete
To request a copy of identifiable information in electronic format
To request that data in electronic format be directly transferred to one or more third parties
To request that personally identifiable information no longer be used for the purposes of the research
To request erasure of personally identifiable information, or, where erasure is not possible, to restrict processing to certain limited purposes
To have the minimum personally-identifiable information possible be used
To have their personally identifiable information retained only for the shortest time possible to fulfill the purposes of the research
In limited cases, participants' rights may be limited in order to ensure the integrity of the research and for the research to be reliable and accurate. If a participant requests action based on their rights, then the principal investigator must contact the NYU IRB and the NYU Data Protection Officer before either acting on the request or denying the participant's request.
Please confirm that this study will comply with participants' rights under GDPR.

☑ Confirmed

Please confirm that you will comply with NYU's policy regarding breach of GDPR data.
See policy under 'Appendix A: Breach of GDPR Data' here. Note that NYU has 72 hours to report breaches to the regulatory authorities; thus, you must report breaches to the NYU Data Protection Officer IMMEDIATELY.

☑ Confirmed

Q11.6 Will identifiable information from adults be collected while they are in the EU/EEA?

1 Point

○ Yes

Adult GDPR Notification/Consent

Under GDPR, participants must be notified of certain information. Please edit the GDPR template (see below) as applicable and upload here. Note that the GDPR information should be presented to subjects separate from the main study consent form(s) (i.e., after participants read and agree to the main study consent form). If applicable, upload both the English and non-English versions of the form(s).

No files uploaded

◉ No

Q11.7 Will identifiable information from children be collected while they are in the EU/EEA?

1 Point

○ Yes

The determination of whether the child participants are competent may depend on the law of the EU/EEA state and on their age, maturity, status, or condition.

- ☐ Yes , all child participants will be competent.
- ☐ No, all child participants will not be competent.
- ☐ Some child participants will be competent and other child participants will not be competent.

Child or Parent GDPR Consent

If child participants are competent to understand and act on their rights under GDPR, then they should be provided the GDPR notification/consent. In this case, the children have the rights under

GDPR, not the parents/guardians. For some studies, parents/guardians may be required to give permission for their child to participate in the study, but they would not be required to be notified of their child's rights under GDPR.
Under GDPR, if a child participant is not competent to understand and/or act on their rights, then the parent/guardian must be notified of certain information. Please edit the parent/guardian GDPR template (see below) as applicable and upload here. Note that the GDPR information should be presented to parents/guardians separate from the main study permission form(s) (i.e., after parents read and agree to the main study permission form). If applicable, upload both the English and non-English versions of the form(s).

If only some child participants will be competent explain why

N/A - we will not be conducting the study on any individuals who are younger than 18 years of age.

◉ No

Q12 Describe the degree and likelihood of any reasonably foreseeable risks or discomforts that may result from participation in the study (e.g., breach of confidentiality, interview questions may cause serious stress, etc.). If applicable, describe how these risks will be minimized.

1 Point

In regards to foreseeable risks or discomforts, our interview questions and experiment are modeled so as not to cause stress to the participant. However, as there is some form of deception involved (i.e. participant is unaware that there is another player in the game, ransom will occur at some point). Undue stress will hopefully be mitigated after the test when conducting the debrief

and providing some information on how Ransomware attacks play out.

Additionally, the hope is that if they are conducting the procedure online that they will be in an environment they recognize. If conducted in person, we will make sure that the participant is seated comfortable and does not feel isolated; proctors will be around to answer any and all questions.

Q13 Describe the degree and likelihood of any benefits to the participants or others, which may reasonably be expected from the research.

1 Point

Participants may be able to benefit from the research by learning more about the cybersecurity landscape and how an individuals' actions can map onto an institution in a similar situation. Ransomware is an important issue to understand and one of the best defenses in any situation involving ransomware is knowledge of the different options present. Finally, as the ransom takes place in the form of a game, and of an "imaginary" asset (the money "points" accumulated during the game), we hope that it will be easy afterwards to distinguish this game from a real-world example.

Q14 Describe any other ethnical concern that may arise from this research both within and outside the scope of human subjects.

1 Point

There may be further ethical concerns that have not been examined, such as more information on the deception of the subject (not letting them know of the true title of the study, purpose of the study). However, we believe we can mitigate the

surprise/stress by structuring a good debriefing that both assures the subject of the fact that this is a game and teaches them useful information regarding the detection, prevention, and response to ransomware.

Q15 Data Security
2 Points

Q15.1 How will data be collected or stored?
1 Point

- [x] Internet-based platform(s), e.g., cloud storage, online survey platform
- [ ] Physical storage devices or locations, e.g., external hard drive, USB stick, local hard drive, cellphone, audio recording device, filing cabinets
- [ ] Other

*required
What Internet-based platform(s) will be used to store data?
NYU requires that all Internet-based data be stored on platforms run by a service provider/vendor with a formal agreement with NYU to ensure compliance with the EU GDPR.

- [ ] NYU Qualtrics
- [ ] NYU Box
- [x] NYU Google Suite -- e.g., Gmail, Google Drive, Google Forms (must use NYU access to Google Suite, not personal access)
- [ ] Other platform(s)

if Other: Identify the name(s) and URL(s) for each platform and provide a justification for why they must be used:

Q15.2 Explain how long identifiable data will be maintained and why it is necessary to maintain identifiable data for this period of time:

1 Point

Under GDPR, identifiable data may be maintained only for the minimally necessary length of time. Data should be fully anonymized as soon as possible without jeopardizing the integrity of the research. Please ensure that the length of time described below matches the description of the GDPR notification/consent form, if applicable.

Our data will ultimately be anonymized during the experiment portion, but we will be sure to discard any data regarding the NetIDs, as they serve as the only identifiable data used in this experiment. Our hope is we will only preserve this data for the duration of the project (this Fall 2021 semester). After this semester, we will delete all Google Form data. We will, however, retain the data gathered from the experiment with the caveat that they cannot be traced back to original Net IDs.

Q16 Which review type do you believe your study qualifies for?

1 Point

Under the revised Common Rule, the exempt categories have changed; some research which previously qualified for expedited review may now qualify as exempt or exempt requiring limited IRB review. Please review these categories when making a selection.

- ○ Exempt (Administrative review)
- ◉ Exempt - Limited IRB review
- ○ Expedited
- ○ Full board (Please select only if your study does not qualify for exempt or expedited)
- ○ Not human subjects research determination (Please only select if you are requesting that the IRB make a determination of not human subjects research)

Explain why:

As our study is a simple game, including a debrief after the fact, we consider this study in line with (3)(i) of the exemption provisions of 45 CFR 46, §46.104 Exempt research. We consider the behavior interventions/interactions within our experiment to be benign.

The only situation that might require additional information is the deception involved where the subject is not aware of the full nature of the proctor. In this case, the subject does not necessarily agree to the method of intervention and information collection. Per (3)(iii), this exemption is not applicable; however, we have included the following information to the consent form: "We will provide an informational handout after the project is completed and will contact you when the results are available. For scientific reasons, this consent form does not include complete information about the study hypotheses and the research questions being tested. You will be fully debriefed following your participation in the research." This informs the participant that they will be taking part in a study where they do not have complete information regarding the experiment. In addition, we have structured our project so that the exit interview also functions as a full debrief, 1) to inform participants of the true goals of the research study, 2) remove any effects of false information, 3) educate participants about the research process and why deception is sometimes necessary, and 4) make participants feel important in the research process.

The intervention will be brief, harmless, painless, not physically invasive, not likely to have significant adverse lasting impact, and interventions will not be offensive or embarrassing. We rely heavily

on the principle that the examples included involve playing an online game or having to allocate nominal amount of cash between themselves or someone else.

Additionally, the provisions of (3) guide our approach, and provide reasoning for why this experiment is exempt.
(A) Our study will mask human subject information and anonymize by giving participants random subject number identifiers. This satisfies this tenant.
(B) No criminal or civil liability risk, or damages to financial standing, employability, education advancement, or reputation will arise as a result of this study. The answers are not sensitive, and the data will be anonymized. This satisfies this tenant.
(C) (a) Risks to subjects are minimized, (b) Risks to subjects are reasonable in relation to anticipated benefits, (c) Selection of subjects is equitable, (d) Informed consent will be sought from each prospective subject (through our consent forms), (e) Informed consent will be appropriately documented or appropriately waived, (f) adequate provisions to protect the privacy of subjects and to maintain the confidentiality of data.

Pretend IRB Application

● UNGRADED

GROUP

Charlie Thomas
Kevin Zhang
✎ View or edit group

TOTAL POINTS

- / 54 pts

QUESTION 1

Screening Questions — 3 pts

1.1 Will your study: — 1 pt

1.2	Does the proposed research involve deception, for example, through provision of misinformation, withholding information, etc.? (NOTE: Withholding the full hypothesis does not constitute deception.)	1 pt
1.3	Does any part of your project present more than minimal risk to subjects?	1 pt

QUESTION 2

Research Personel — 2 pts

2.1	Add all engaged NYU research personnel (group members) to this section.	1 pt
2.2	Please describe what role all personnel will have on the project. Include the name(s) and responsibilities for each person. When describing responsibilities, do not use nouns or titles, e.g., PI, researcher. Instead, use action statements, e.g., obtain consent, distribute and collect surveys, analyze identifiable data.	1 pt

QUESTION 3

Project Information — 3 pts

3.1	Project TItle	1 pt
3.2	Briefly summarize the purpose and procedures of the proposed research using non-technical language that can be readily understood by someone outside the discipline. Use complete sentences (limit 300 words).	1 pt
3.3	Will any research procedures be conducted with participants located outside the United States?	1 pt

QUESTION 4

International Research — 3 pts

4.1	Are the procedures conducted in non-US countries conducted exclusively online or on the phone?	1 pt
4.2	In what countries/regions (cities, towns, etc.) will participants be located?	1 pt
4.3	Given the nature of the research and information collected from participants, will any countries/locations be included in which there may be concerns regarding privacy or confidentiality for online or phone procedures?	1 pt

QUESTION 5

Data Collection — 8 pts

5.1	Will you be conducting **Surveys, questionnaires, interviews, or focus groups**	1 pt
5.2	Will you be doing **internet data collection, e.g., online survey**	1 pt
5.3	Will you be engaging in observation of participants (including field notes)	1 pt
5.4	Will you be collecting recordings of participants (video, image, audio)**	1 pt

5.5	Will you be collecting data from biological specimens for research purposes, e.g., blood, saliva, hair, nail clippings or Devices, e.g., MRI, eye-tracking, EEG, galvonic skin response sensors **	1 pt
5.6	Will you be collecting data from virtual reality devices	1 pt
5.7	Will you be taste testing?	1 pt
5.8	if you will be taste testing: Will you screen for allergies	1 pt

QUESTION 6

Project Information II — 4 pts

6.1	Will you be conducting secondary analysis of data?	1 pt
6.2	Will data that may be clinically relevant to participants be collected?	1 pt
6.3	Interventions/Clinical Treatments and Manipulations/Tasks	1 pt
6.4	Description of Study Procedures	1 pt

QUESTION 7

Participants & Recruitment — 7 pts

7.1	Participant Populations	1 pt
7.2	Total number of participants:	1 pt
7.3	What are the criteria for inclusion for potential participants, e.g. age ranges, country of birth or native language, medical status, grade in school, membership in a particular organization, marital or parental status?	1 pt
7.4	What are the criteria for exclusion for potential participants, e.g. age ranges, country of birth or native language, medical status, grade in school, membership in a particular organization, marital or parental status?	1 pt
7.5	Will participants be screened to determine eligibility?	1 pt
7.6	Participant Identification, Recruitment, & Selection	1 pt
7.7	Will participants receive compensation for participating in the research , e.g., free services, cash payments, gift certificates, parking, classroom credit, travel reimbursement?	1 pt

QUESTION 8

Consent and Privacy — 6 pts

8.1	(no title)	1 pt
8.2	Indicate the consent process(es) and document(s) to be used in the study. Provide copies of documents, as applicable.	1 pt
8.3	Are you applying for a waiver of documentation of consent or parental permission (i.e.,	1 pt

unsigned)?

8.4 Describe the procedures for obtaining consent/assent/parental permission, including when, where, and how it will be obtained. 1 pt

8.5 Describe how participants, parents, and/or their legally authorized representatives will be provided sufficient opportunity (e.g., waiting period, if any) to consider participation and how the procedures for obtaining consent/assent/parental permission minimize the possibility of coercion or undue influence. 1 pt

8.6 Describe the provisions to protect the privacy interests of the participants. 1 pt

QUESTION 9

Data Confidentiality & Risks and Benefits 2 pts

9.1 Explain how information is being handled, including storage, security measures (as necessary), and who will have access to the information. Include storage security procedures for both electronic and hard copy records. 1 pt

9.2 Will personally identifiable information be linked to the research data at any time? 1 pt

QUESTION 10

Indicate what will happen to the identifiable data at the end of the study. 3 pts

10.1 (no title) 1 pt

10.2 Will de-identified versions of the data be used for future research, shared with other researchers, or placed in a data repository? 1 pt

10.3 Will audio or video recordings that may include identifiers be transcribed by non-research personnel (e.g., transcription company)? 1 pt

QUESTION 11

European Union General Data Protection Regulation 7 pts

11.1 (no title) 1 pt

11.2 Will the data obtained from participants in the EU/EEA or processed by an EU/EEA organization be identifiable? 1 pt

11.3 If using Qualtrics to collect data from participants in the EU/EEA, will the Anonymize Response option be selected to prevent Internet Protocol (IP) addresses from being collected? 1 pt

11.4 Will "special categories" of data be collected from participants in the EU/EEA? 1 pt

11.5 (no title) 1 pt

11.6 Will identifiable information from adults be collected while they are in the EU/EEA? 1 pt

11.7 Will identifiable information from children be collected while they are in the EU/EEA? 1 pt

QUESTION 12

Describe the degree and likelihood of any reasonably foreseeable risks or discomforts that may result from participation in the study (e.g., breach of confidentiality, interview questions may cause serious stress, etc.). If applicable, describe how these risks will be minimized. 1 pt

QUESTION 13

Describe the degree and likelihood of any benefits to the participants or others, which may reasonably be expected from the research. 1 pt

QUESTION 14

Describe any other ethnical concern that may arise from this research both within and outside the scope of human subjects. 1 pt

QUESTION 15

Data Security 2 pts

15.1 How will data be collected or stored? 1 pt

15.2 Explain how long identifiable data will be maintained and why it is necessary to maintain identifiable data for this period of time: 1 pt

QUESTION 16

Which review type do you believe your study qualifies for? 1 pt