

Essays on Social Distance and Economic Decision Making

by

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To my parents,
and
to Fatemeh, Hossein-Ali and Vahideh

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Abstract

The following thesis presents three distinct experiments focusing on social distance. We first examine experimentally whether individuals' decision to delegate is a function of social distance. Using a principal-agent setup we offer the principals the option to either decide themselves how much money to share with a recipient or hire an agent to make the decision on their behalf. By varying the social distance between principals and recipients we provide new evidence that shows low social distance makes principals less likely to delegate, ceteris paribus. Additionally, we find that even when principals decide to delegate, low social distance makes them more pro-social and thus, delegation is not used as a means to shift the blame for selfish behaviour.

The second experiment examines the potential motives explaining why people delegate less as social distance decreases. Our focus is on two motives: direct altruistic motives and expectation of future reciprocal favours. To study the effect of directed altruism, we vary the social distance between principal and agent while keeping the anonymity between them. To observe the role of expected reciprocity we vary anonymity between friends. Our results suggest that, for a given sharing decision, it is directed altruism that drives the decrease in principals' delegation decision when social distance is closer between principal and recipient. We do not find expected reciprocity to play a role in principals' delegation decisions, however, we do find this motive to drive principals' choice of a pro-social agent.

The final experiment examines the role of culture on individuals' performance and willingness to compete. Subjects take part in a summation task with either a competitive payment incentive or a fixed payment incentive. To observe the role of closeness in culture, we invite Chinese subjects who are from a collectivist culture and British subjects who are from an individualistic culture. We find that subjects from the Chinese culture perform better in both competitive and non-competitive tasks compared to subjects from the British culture. We do not find a difference between Chinese and British subject tournament entry decisions.

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List of abbreviations

- IOS: Inclusion of Others in the Self
- F-F: Friends to Friends
- F-S: Friends to Strangers
- S-S: Strangers to Strangers
- SA: Stranger - Anonymous
- SNA: Stranger - Non-Anonymous
- FA: Friends - Anonymous
- FNA: Friends - Non-Anonymous

Chapter 1

Introduction

1.1 General Introduction

For years behavioural economics has highlighted the role social distance plays in determining individuals' decisions. Social distance is known as emotional proximity induced by a situation where people are expected to act in favour of those with a higher degree of social kinship (Bogardus, 1928). In economic interactions, people usually have some kind of information about each other (Cobo-Reyes and Jiménez, 2012) and they tend to care about others as much as they care about themselves (Fehr and Schmidt (1999); Charness and Rabin (2002); Bolton and Ockenfels (2000)). Individuals are known to act more favourably toward others with closer social distance from them such as their friends (Tajfel et al., 1971). Social distance plays a major role in determining economic decisions and it is typically determined by nationality, occupation, race, etc. (Charness and Gneezy, 2008).

In this thesis, I study social distance variation under two different decision-making themes. The first theme investigates individuals' delegation decisions in a principal-agent setting. In particular, I focus on principals' delegation decisions when the social distance between a principal and a recipient varies. With this theme, I find that principals are less likely to delegate their decisions to an agent and this is driven by altruistic motives. I contribute to this field of research by examining social distance variation and the role it plays on individuals' delegation decisions and their choice of agent.

The second theme focuses on performance and competitiveness, where individuals are asked to solve problems in a summation task with either a competitive or a non-competitive payment scheme. I also study social distance within individualist and collectivist cultures and how they determine performance and willingness to compete

within two different cultural groups. With this theme, I find that social distance and the closeness that people feel towards others in their society differs across cultures and this can play an important role in determining performance. I find that in a collectivist society such as China, individuals not only feel closer to each other but also perform better regardless of the monetary incentives.

In the second chapter of my thesis, I study how social distance variation can influence individuals' delegation decisions. Delegation is known to confer efficiency, meaning that the principal may hire an agent because the agent is better informed or has a lower opportunity cost of time. However, delegation may in some cases occur for reasons unrelated to efficiency. Individuals may delegate decisions because they do not want to be responsible for a selfish outcome of an action and they want to shift the blame (Bartling and Fischbacher, 2012). In a leading study, Hamman et al. (2010) show that actions taken through delegation are in fact less pro-social than actions taken directly.

Inspired by Hamman et al. (2010), I use a modified dictator game in a principal-agent setup. In this experiment, principals are offered a fixed endowment and they are asked to decide how much they are willing to allocate to the recipient. The agents on the other hand are asked to propose how much they would share with the recipient if they are chosen by the principals to make the final allocation. Principals are then presented with the agents' proposals and will need to decide either to share with the recipient their initial offer or hire one of the agents to make the decision on their behalf. It is noted that the agents' proposals are non-binding, meaning that the agents can offer the recipient any amount if they are chosen by the principal, regardless of their initial proposal to the principal.

The experiment is conducted in three treatments. In the first treatment which we refer to as the Stranger to Stranger (S-S) treatment, we invite subjects to the lab randomly. We then pair subjects together randomly and assign them a role. In the second treatment, we invite subjects to the lab and ask each subject to bring along a friend. The friend they bring can be a housemate, a classmate, or any friend that they know and interact with regularly. When subjects arrive at the lab, we pair each subject with the friend they brought with them to the lab. This treatment is referred to as the Friend to Friend (F-F) treatment. We also run a third treatment where we invite subjects to the lab and ask them to bring a friend, but we do not pair subjects with their friends. This treatment is referred to as the Friend to Stranger (F-S) treatment. These variations in treatments will show us the effect that social distance has on individuals' delegation decisions.

Delegation is often used as a moral wiggle room, where principals can take selfish actions and not get blamed for the outcome. We find that this may not be the case when the social distance between principals and recipients decreases. Our findings from this experiment show that principals share more generous offers with their friends compared to strangers. This finding is in line with Hoffman et al. (1996), Charness and Gneezy (2008) and Branas-Garza et al. (2010), showing that with a closer social distance between subjects, generosity increases. Principals are also less likely to delegate their decisions to an agent when they are paired with their friends. We also observe that conditional on delegation, principals are more likely to hire a more pro-social agent when they are paired with their friends. These results may conjecture that when there is a close social distance between individuals, delegation cannot be used as a moral wiggle room.

In chapter three we extend the analysis of the second chapter and study the pro-social motives driving principals' sharing and delegation decisions when the social distance between a principal and recipient varies. In the second chapter, we showed that variation in social distance induces pro-sociality which leads to more generous offers and less delegation from the principals. Using a principals-agent set up we identify these mechanisms and explain the decrease in principals' delegation decisions when principals are interacting with their friends. In particular, we follow Leider et al. (2010) and focus on two motives: directed altruism and expectation of future reciprocal favours.

Directed altruism is people's preference for the well-being of their friends and those with closer social distance to them. By varying the social distance between principal and recipient we can identify the role of directed altruism. For this, we pair principals with both a stranger and their friends and we examine how principals' sharing and delegation decisions differ for their friends compared to strangers. If directed altruism is driving principals' decisions, we expect principals to share more and delegate less when they are paired with their friends compared to a stranger when the principal is anonymous to the recipient.

On the other hand, expected reciprocity is a pro-social motive where principals act more pro-social towards their friends mainly because they expect reciprocation from them in the future. Since future reciprocation requires principals to have a history of interaction with the recipient that may continue, we compare principals' anonymous decisions with their non-anonymous decisions when they are paired with their friends. If expectations of future reciprocal favours play a role in principals' sharing and delegation decisions, we expect principals to share more with their friends and delegate less in the non-anonymous treatment compared to the anonymous treatment.

For this experiment, we have three roles: principals, recipients, and agents. We offer the principals a fixed endowment and ask them to decide how much they would like to share with the recipients. Simultaneously we ask the agents to decide how much they would share with the recipient if they are chosen by the principal to make the decision on their behalf. A principal is then presented with the agents' proposal and will need to decide either to share their initial offer or choose one of the agents to make a decision on their behalf. The agents' proposals are non-binding which means that if they are chosen by the principal, they can share any amount with the recipient. This can be the same or different from their initial offer.

We invite subjects to the lab and ask them to bring a friend along with them. We assign each individual in a pair either the role of a principal or the recipient. One pair in each session will have the role of agent. The principals are asked to make multiple decisions in this experiment. Every principal makes decisions for both their friends and a stranger in the room. For each pair, the principal also makes both an anonymous and a non-anonymous decision. If decisions are anonymous, the recipient is not told who (i.e., their friend or a stranger) made the corresponding decision for them. On the other hand, if decisions are non-anonymous, then the recipient is informed about the principals' relation to them and the final decision. To observe the role of directed altruism we study principals' anonymous decisions when they are paired with their friends and their anonymous decisions when they are paired with strangers. To observe the role of expected reciprocity we study principals' anonymous and anon-anonymous decisions for their friends.

Our results from this chapter suggest that the increase in principals' sharing is driven by both directed altruism and expected reciprocity. However, principals' delegation decisions are only driven by directed altruism. We do not find evidence for expected reciprocity as a pro-social motive driving principals' delegation decisions. Although principals' delegation decision is not determined by the expectation of future reciprocal favours, principals' choice of agent is significantly determined by this motive. If principals do delegate their decisions, their choice of a pro-social agent is significantly determined by expected reciprocity. We do not find directed altruism to play a role in principals' decisions after delegation.

To the best of our knowledge, this chapter provides the first results, distinguishing the role of directed altruism and expected reciprocity as pro-social motives driving delegation decisions. Given that delegation is an important part of business interactions, studying the motives behind this decision is particularly important for policy-makers. Studies such as this will help micro-finance better direct their resources by identifying cultures

as altruistic based or reciprocity based.

The fourth chapter provides evidence on how closeness within a culture can affect performance and willingness to compete under different compensation schemes. Culture is known to drive two important attitudes in the workplace: performance and competition (Booth et al., 2018). These two attitudes can be incentivised by different payment schemes. Recent studies suggest that culture significantly affects behaviour (Gneezy et al., 2009). Carlsson et al. (2020) and Zhang (2019) confirm that cultural differences lead to a gender gap in performance and competition. In this chapter, we study how people perform and compete in cultural groups where people feel closer to each other compared to cultural groups where people feel distant from each other. Studies on various cultures show that, unlike in individualistic cultures, in collectivist cultures, people feel closer to each other and are more likely to behave more pro-social (Cameron et al., 2015). They also explain that, in a collectivist culture, under a competitive and non-competitive payment scheme, women perform equally or as good as men. They show that performance in a competitive payment condition is significantly better compared to a fixed payment condition. These studies also show that in individualistic cultures we expect to see more competition. Here we study differences under two performance payment schemes and cultural groups' preferred payment scheme.

We invite subjects either of a Chinese nationality or a British nationality and we conduct single nationality sessions meaning that everyone within a session was from the same nationality. Inspired by Niederle and Vesterlund (2007) we design an experiment where subjects are paired in a group with another person and are asked to solve summation problems under either a piece-rate payment scheme or a tournament payment scheme. In the piece-rate payment, scheme subjects are paid a fixed amount for every correct response. In this case subject's payment depends on their performance and ability. In the tournament payment scheme subjects are paid only if they solve more problems compared to their paired partner in the group. In this case subject's payment depends on not just their performance and ability but also their paired partner. Using these tasks, we elicit subjects' productivity. We then ask subjects about their preferred compensation scheme. Subjects are asked to choose either the piece rate or the tournament for the payment method of their final task. We elicit subjects' preference for competition in this task. In the end, we ask subjects to indicate their belief about their rank in their pair, their level of risk aversion and how close they felt to another person of their nationality.

Our results are surprising. We show that the Chinese subjects perform better than the British subjects in both the piece rate and the tournament task. We explain that this is due to the institutional reforms which encouraged gender equality since the communist

regime in China. We show that the better performance from the Chinese subjects is mainly driven by Chinese women. We explain that closeness in collectivist group and better math test scores from Chinese women can explain the difference in performance. We also show that there is no competition difference between the Chinese subject and the British subject. Our result is robust for a given level of confidence, the difference in performance and risk aversion.

Chapter 2

Shifting the blame: Does social distance matter?

2.1 Introduction

Delegation is a ubiquitous tool, commonly used in economic activities and business interactions. Every day, people make or encounter decisions that not only affect themselves but also affect others. These decisions range from choosing a restaurant to firms deciding to relocate. Despite preferences for control and decision autonomy, people still do opt for delegation as a way of maintaining efficiency or avoiding taking the blame for a self-interested decision[1] (Charness et al. (2012); Hausfeld et al. (2020)).

Delegation can take on various forms. People can use other decision making processes like random number generators, coin flips or a die to avoid the burden of a decision (Blount (1995); de Melo et al. (2016); Kirchkamp and Strobel (2019))[2]. In a standard principal-agent setting, principals delegate their decisions to agents because the agents are either better skilled, better informed or have lower opportunity costs (Fershtman and Gneezy, 2001). In this case, delegation is assumed to be efficiency-driven. A recent line of study introduced by Hamman et al. (2010) shows that efficiency may not always drive delegation decisions. Principals may hire agents to take on self-interested decisions that the principals are reluctant to take on themselves. In this case, delegation is used as a way to avoid punishment (Coffman, 2011) or shift the blame (Bartling and Fischbacher, 2012) of a self-interested action.

[1] Delegation has also been explored in previous studies as a way for people to retain control and authority over their decisions (Fehr et al., 2013); (Owens et al., 2014).

[2] In this case they do not shift the blame (Steffel et al., 2016).

In this paper, we study the role of delegation as a blame shifting device. Given that many social interactions and workplace relationships are characterised by social distance, we create a principal-agent setup while varying the social distance and observe, the value of keeping control over decisions. People communicate and interact with each other on a daily basis and through this interaction, they develop a sense of closeness. Given the rapidly changing nature of interactions, from in-person interactions to remotely conducted interactions, we recognise the importance of social distance, and we analyse individuals' delegation decisions when it affects friends compared to when it affects strangers. We ask the question, are people more or less willing to delegate their decisions when social distance varies?

To answer this question, we conduct an experiment, with a principal-agent setup. We build on the work by Hamman et al. (2010) and design a one-shot dictator game where we vary the social distance between principals and recipients while giving the principals the option to delegate their decisions to anonymous agents[3]. In this layout, principals first decide how much to share with a paired recipient. Once the decision is made the principals are offered the opportunity to delegate their decision to an agent. Prior to making their delegation decisions, the principals receive a non-binding message from the agents, announcing the amount they intend to share with the recipient on their behalf. The agents' non-binding proposals provide a moral wiggle room for the principals to deny any information about the agents' real intention[4]. The principals observe both agents' proposals and are asked to either stick with their initial sharing decision or delegate the decision to one of the two agents in the room. With this set up we can observe if delegation decisions are social distance dependent.

To observe the effect of social distance on delegation decisions, we exogenously vary the social relationship between principals and recipients. Depending on the treatment, principals are either paired with a friend or with a stranger as the recipient. The friends are individuals who have a previously established history of social interaction with the principals and the strangers are individuals with no previous history of social interaction with the principals. With this design, we examine the behaviour of real groups and their decisions when interacting with their friends in a natural situation.

Existing literature on laboratory experiments shows that real group manipulation and interaction with real friends during experiments is successful in varying the social distance between individuals (Reuben and van Winden (2008); Leider et al. (2009) Leider

[3]Using anonymous agents allows us to make sure principals' delegation decisions are not dependent on principals and agents' social distance.

[4]A moral wiggle room is referred to as situational excuses where people find it morally ok to behave self-interestedly (Dana et al., 2007).

et al. (2010); Gachter et al. (2019)). With this in mind, we establish our three treatments. We refer to the first treatment as the friends to friends treatment (F-F) where we minimise the social distance and pair the principals with their friends. For the baseline treatment we maximise the social distance between principals and recipients by pairing the principals with a randomly matched stranger (S-S treatment). We also run a friends to stranger treatment (F-S) where we invite principals to the lab with their friends, but we do not pair them in one group. With this treatment, we control for decisions made in the presence of friends and we determine if delegation decisions are social distance dependent.

Although our treatment manipulation is commonly used in previous literature, we still need to evaluate the social distance differences among participants. To do this, we employ a well-established technique, known as the 'Inclusion of the Other in the Self' (IOS) scale introduced by Aron et al. (1992). This scale is presented in seven overlapping circles, which represent the relationship between two individuals. Gachter et al. (2015) and Gachter et al. (2019) use the IOS scale to determine the closeness between individuals in their experiment. In our study, we use the same setting and ask participants to state how close they feel to their friends or a stranger depending on the treatment. Participants in the F-F treatment and the F-S treatment score their friends closer while they score the strangers more distant. This result confirms the success of our social distance manipulation.

Our findings from this experiment show that, as the social distance between the principal and the recipient decrease, principals' offers become more generous. This is in line with Hoffman et al. (1994) and Hoffman et al. (1996), where they conduct a dictator game with both a double-blind and a single-blind treatment[5]. They find that in a single-blind dictator game offers are more pro-social than offers in a double-blind dictator game. Bohnet and Frey (1999) and Charness and Gneezy (2008) also show that dictators offer more to the recipients when anonymity between them is removed. Our findings from this study confirms the main message that as the social distance between dictators and the recipient decreases, dictators, become more generous towards the recipient[6]. We also find that the recipients' expectations about principals' shared offers also change with social distance. As the social distance between the principal and recipient reduces, the recipients' expectations about principals' shared offers to them increase. This finding is also observed in previous literature (Rankin, 2006). Our main finding focuses on

[5]In the double-blind treatment, both the dictator and the recipient have no information regarding each other, while in the single-blind treatment the dictator has information about the recipient.

[6]Our results are in line with Hoffman et al. (1994) and Charness and Gneezy (2008), however the results from Dufwenberg and Muren (2006) provide an exception for these results.

principals' delegation behaviour, where we show that principals are less likely to delegate their decisions when the social distance between them and the recipient decreases ceteris paribus. Conditional on delegation, principals are also more likely to delegate their decisions to more pro-social agents when paired with their friend as the recipient. These results suggest that, when social distance is reduced, delegation is probably not the best tool to shift the blame, since in this case, the promotion of pro-social behaviour can lead to less exploitation of the moral wiggle room.

Overall, our paper contributes to research on delegation and the literature on social distance. Currently, there are few experimental studies focusing on delegation decisions and the effect of social distance. Studies on delegation decisions such as (Hamman et al. (2010); Bartling and Fischbacher (2012); Coffman (2011)) take place in an anonymous setting where the principal, recipient and agent are strangers. These studies indicate that, in an anonymous setting, principals delegate their decisions to agents to avoid punishment and shift the blame for a self-interested action. They also find that when delegation occurs, the principals almost always hire the less pro-social agent. Our results are in line with these findings, highlighting that when social distance is reduced, principals hire the more generous agent. In this case, the agent chosen is always more pro-social compared to the other agent but always less pro-social than the principals themselves. These findings are also in line with the "Moral wiggle room" literature, where individuals use situational excuses to behave self-interestedly (Dana et al. (2007); Larson and Capra (2009)). Hiring agents to take on a decision on behalf of the principals creates an excuse for the principals to behave in a selfish manner and deny having any knowledge of the immoral decision made. The existence of agents with non-binding proposals provide a moral wiggle room for the principals to exploit.

Our results contribute to the experimental literature on individual and strategic decision making. One main approach for varying the degree of social distance among individuals is friendship. The role of friendship has been studied extensively in trust games (Glaeser et al., 2000), dictator games (Leider et al. (2009); Leider et al. (2010)) and minimum effort games (Gachter et al. (2019); Chierchia and Coricelli (2020)) showing that friendship induces more pro-social behaviour between people. Hence, we can say that friendship among individuals, minimises social distance and creates a close social tie which can lead to more pro-social decisions. Social distance has been shown to be a key aspect that shapes how strategic interaction environments are perceived[7]. For example, social distance is an important determinant of individuals' choices in simple 2×2 games such

[7]A large literature in economics has demonstrated that context matters a great deal both in terms of individual and strategic decision-making (Tversky and Kahneman (1981); Croson and Gneezy (2009)).

as the prisoner's dilemma (Charness et al., 2007a), reciprocal decisions in the lost-wallet game (Charness et al., 2007b), contribution behaviour in simultaneous and sequential public good games (Eckel and Grossman (2005); Croson and Shang (2008); Drouvelis and Nosenzo (2013)), and tastes for competition (Cornaglia et al., 2019), among others. Here, we establish a causal link between social distance and delegation behaviour.

The remainder of this paper is organized as follows. Section 2 describes the experimental design, treatments, and procedure. In section 3 we introduce our behavioural hypotheses about the expected treatment effects. Section 4 presents the results of the study. We conclude our study in section 5.

2.2 Experimental Design

2.2.1 Framework

In this experiment, we use a modified one-shot dictator game similar to Hamman et al. (2010) to examine the impact of social distance on delegation[8]. We use a principal-agent setting with a between-subject design, where principals are offered the opportunity to delegate decisions to agents or take on the decision themselves. In particular, there are three roles assigned in the experiment: principals, recipients and agents[9].

Participants in the role of principals are offered £8.00 as an initial endowment and they are asked to decide how much they are willing to share with their paired recipient in increments of £0.10. The recipient has no option but to accept the principal's offer. In an incentivised setting, the recipients are also asked to specify how much they expect to receive from their matched principal. If recipients guess the amount shared with them by the principals correctly, they receive £0.40. If their guess deviated by £1.00 in either direction from the principal's allocation, they receive £0.20. They will receive no additional payment if otherwise. At the beginning of the experiment, participants in the role of principals and recipients made decisions in both, the role of principal and the

[8]The advantage of a one-shot game is that it eliminates confounding effects that might come from repeated interaction, allowing us to focus on the pure effects of social distance on delegation behaviour. In contrast, in a repeated game, there is always the possibility that subjects think the other subject's future behaviour may be influenced by their own current behaviour. In addition, it could be that a repeated game design may itself affect the social relationship among subjects, even if interactions are anonymous. To rule out these possibilities, we implemented a one-shot protocol in our experiment.

[9]In the instructions, we refer to the principal as "Participant A", the recipient as "Participant B" and the agent as "Participant C".

role of recipient[10]. The final role assigned to them is determined randomly at the end of the experiment and they are paid based on the decision they made in that role.

While principals decide how much to share with the recipient, the agents are asked to state how much they are willing to share with the recipient, if they are chosen to decide on behalf of the principal. Each session consists of two randomly selected agents, where they both have to decide how much to propose to the principal[11]. Participants in the role of agents remain in the same role for the entire experiment and they are paid based on the decisions they make in this role. The agents' proposals are non-binding, which means, if chosen, the agents can offer any amounts to the recipients regardless of the proposal they made. The non-binding proposals provide the principal with the opportunity to deny having any knowledge of the agent's final allocation and hence deny any responsibility for the final allocation made to the recipient.

Once agents make their decisions, their proposals will be presented to each principal along with the principals' initial allocation. Principals observe both the proposals from the agents and their own initial allocation and are asked to choose either to stick with their initial allocation or delegate the decision to one of the two agents. If principals decide not to delegate their decision, the recipient will receive the principals' initial allocation. However, if principals decide to delegate their decision to one of the agents, the recipient will receive any amount the chosen agent decides to send to the recipient from the principals' endowment. This can be the same or different from their initial proposal.

At the end of the experiment, participants receive their earnings, depending on their role and their decisions. Principals' earnings are their initial endowment minus the amount they share with a recipient. The amount shared with the recipient depends on the principals' decision to delegate. If principals decide not to delegate, the amount they share with the recipient is their own initial allocation. However, if principals decide to delegate their decision, the amount they share with a recipient is the amount their chosen agent offered to the recipient on their behalf.

$$\pi_{Pi} = w - \pi_{Ri}(x_i, x_A, Del) \tag{2.1}$$

[10]We use a strategy method where principals also take on the role of recipients. Although, Roth (1995) suggests that people thinking about every information set could affect behaviour, Brandts and Charness (2000) suggest that the behaviour induced in a strategy method is no different from the direct method. This also maximised our number of observations.

[11]We use two agents because we want to keep the role of agent random and since participants come to the lab in pairs (in the friends' treatment) we can assign a pair the role of agent. This will create more incentive for the agent, and it will remove the possibility of an agent having a monopoly power where she is the only supplier. Having two agents also allows us to observe whether principals select the more pro-social or the less pro-social agent depending on their social distance.

In equation (2.1), the principals' earning is π_{Pi}, the principals' initial endowment is w and the amount shared with the recipient is π_{Ri} which depends on the principals' initial allocation (x_i), the agent's final offer (x_A) and the principals' delegation decision (Del). Principals' delegation decision is binary where it takes the value 1 if principals decide to delegate their decision to an agent and 0 if they decide not to delegate their decision to an agent.

Recipients' earnings are the amount shared with them by the principal. This can be either the initial amount the principal decides to share with the recipients, or it can be the amount offered to them by the agent on behalf of the principal.

$$\pi_{Ri} = (1 - Del)x_i + (Del)x_A \tag{2.2}$$

In equation (2.2), the recipients' earnings are shown as π_{Ri}, where the principals' initial sharing is x_i, the amount the agent offers on behalf of the principal is x_A and principals' delegation decision is $(Del) = \{0, 1\}$.

The agents' earnings are independent of principals' allocation and are calculated depending on the number of principals that choose them in the session. In their paper, Hamman et al. (2010) structure the agents' payoff with a £5.00 starting capital. The agents received or lose additional payment in each round based on how many principals choose them. This payoff function creates a set-up in which agents, face a fixed cost of providing a service £0.60, zero marginal cost, and a constant marginal revenue of £0.30. The agents are paid based on their cumulated payment from each round. Since our experiment is a one-shot game, we modify the agents' payment for one round where the agents starting capital is £5.00 and they face a fixed cost of providing service £0.60 and a constant marginal revenue of £0.30. Hence the agent's starting capital will take in to account their fixed cost for one round. The agents receive a fixed income of £4.4 and they can earn more depending on the number of principals who decide to choose them. Agents' earnings were based on the following payoff function:

$$\pi_{Ai} = 4.4 + 0.30n_{Pi} \tag{2.3}$$

In equation (2.3), n_{Pi} represents the number of principals that delegate their decision to an agent. This payoff function, recognised by Hamman et al. (2010), generates a setting where agents face a constant marginal revenue of 0.30 which can increase their total income. Agents' earnings are independent of any allocation decision principals make. One main advantage of this set-up is that it avoids directly rewarding the agent for

behaving in a way that maximises principals' payoff.

Once the participants make their final decision they are asked to state their level of closeness toward the recipient[12]. At the end of the experiment, participants observe their earnings and are asked to fill out a questionnaire. Once everyone has filled out the questionnaire they were paid in private and in cash.

2.2.2 Treatments

Our experiment consists of three treatments where we vary the social distance between the principal and recipient while observing the principals' delegation decisions. To observe decisions when social distance varies, we exogenously manipulate the relationship between principals and recipients by inviting them as groups of friends. We ask participants to bring with them a friend to the lab, who they know [13]. By varying how we pair principals with their friends we manipulate the social distance between them.

The second treatment is referred to as the Friends to Friends treatment (F-F treatment), where the principal and recipient have a prior history of social interactions with each other. In the Friends to Friends (F-F) treatment, we pair principals with their friends as the recipient, upon their arrival at the lab. With this treatment, we can understand whether bringing a friend to the lab and interacting with them matters. This treatment also allows us to observe principals' decisions when the social distance between them and the recipient is minimised.

We compare decisions in the F-F treatment with our baseline treatment. The baseline treatment of the experiment is referred to as the Stranger to Stranger treatment (S-S treatment). In this treatment principals and recipients are strangers with no known prior social relationship. Principals in this treatment are invited randomly out of our student pool and are matched with recipients who are also randomly invited to the lab. Both the principal and the recipient have no information about their paired partner in the experiment. The social distance between principals and recipients are maximized in this treatment.

To control for possible prior connections between principal and recipient in the S-S treatment we conduct a second manipulation. We invite participants to the lab and ask

[12]If we had asked subjects to report their IOS scale ratings at the beginning of the experiment, this would have likely generated priming effects which would, in turn, contaminate behavioural outcomes. Although, Gachter et al. (2019) report evidence that prior play of the game has no detectable impact on subsequent measurement of closeness, we opted to elicit closeness ratings after game play.

[13]Appendix A.1 provides the invitation email we sent to subjects.

each participant to bring with them a friend to the lab. We refer to this treatment as the Friends to Stranger treatment (F-S treatment) and although we invite participants to the lab as friends, we do not pair them during the experiment. In this treatment, principals are paired with a random recipient in the session who is not the friend they brought to the lab. In this case, the principals do not have any known prior history with their paired recipient. The principal in this case has no information regarding their recipient and all they know is that they will not be paired with their friend. With this treatment we can also understand whether bringing a friend to the lab but not interacting with them matters.

By observing principals' decisions in these treatments, we can observe the role of social distance on principals' delegation decisions. Since our experiment only focuses on principals' decisions, we keep the relationship between agents and the other participants (principals and recipients) constant in all treatments. The agents' identity is unknown to the principal, the recipient and to the other agent, and the agents also have no information about the other participants in the room[14].

2.2.3 Measuring Closeness

In the final part of our experiment, we assess the impact of exogenously minimising the social distance between principals and their paired recipients. We make use of a tool known as the Inclusion of Others in the Self (IOS) scale which measures the strength of relationships between pairs of individuals and summarizes their social relationships. The IOS scale has been widely used in psychology and economics and it was introduced first by Aron et al. (1992) [15]. The scale consists of seven overlapping circles where one circle represents the individual itself and the other represents the other pair. The depth of overlap among the circles represents the level of closeness between individuals.

Participants are asked to select a pair of circles that best represents the relationship between them and the paired participant in the group from their point of view. If participants feel completely distant, they will select the first pair of circles (option A) in Figure 2.1, describes their relationship. On the other hand, if they feel very close to each other they may choose the completely overlapping circles (option G). Although this measure is based on individuals' own perception of closeness, it has two main advantages. First, it measures relationship closeness without taking into consideration

[14]Recall that, in all treatments, the number of agents was always equal to two within a given session.

[15]Gachter et al. (2015) and Gachter et al. (2019) use the IOS scale to determine how social relationships affect coordination in a minimum effort game.

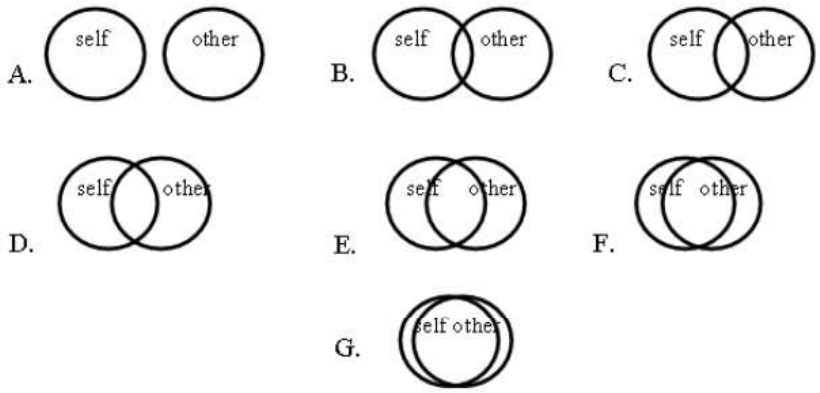


Figure 2.1: The Inclusion of the Other in the Self (IOS) scale

its determinants and second, it is very simple to implement. Using this scale, we observe how participants report their level of closeness to the individual in their pair while manipulating the social distance between them.

Studies on interpersonal relationships suggest that the feeling of closeness is developed through the frequency of interactions between individuals (Kelley et al., 1983). We manipulate the social distance between participants by inviting them to the lab as friends or strangers and pairing them with each other. We run three treatments where we ask subjects to state their level of closeness with regard to their friends and with regard to a random stranger in the room[16]. Participants making decisions in the S-S treatment are asked to only state their level of closeness with regards to a random person in the room[17]. The IOS scale is answered at the end of the experiment before the participants are paid[18]. By observing the difference in the IOS scale in each treatment, we can conclude whether the exogenous manipulation of the social distance between the principal and recipient is successful.

2.2.4 Procedure

We conduct the experiment in May 2018 at the University of Birmingham using z-Tree software (Fischbacher, 2007). Using the ORSEE software (Greiner, 2015) we recruit a total of 302 subjects to participate in our experiment. We recruited 114 participants for the S-S treatment, 110 participants for the F-F treatment and 78 participants for the F-S

[16]To avoid sequence effects, we randomised (at the individual level) the order in which we ask the participants to state the IOS scale ratings towards a random stranger and towards their friend in the lab.

[17]The screens participants see in these scenarios are presented in Appendix C.

[18]If we had asked subjects to report their IOS scale ratings at the beginning of the experiment, this would have likely generated priming effects which would, in turn, contaminate behavioural outcomes.

treatment. Before the start of the session, participants received written instructions[19]. The instructions were also read out loud to make sure all subjects understood the decision procedure and the payoff calculations. On average each session lasted 40 minutes. At the end of the session, participants were paid in private and in cash. The average earning for each session (including a show-up fee of £2.50) was £6.66. Before receiving their payments participants filled out a short questionnaire specifying their gender and other demographics.

2.3 Hypotheses

The following hypotheses address the impact of social distance on principals' sharing decisions and principals' delegation decisions. Research on principals' sharing decisions show that, in a simple dictator game, principals share positive amounts with the recipient regardless of their social distance (Forsythe et al. (1994); Hoffman et al. (1994)). These studies also confirm that, as the social distance between principal and recipient decrease, principals share more generous amounts with the recipient and become more pro-social with their decisions (Hoffman et al. (1996); Bohnet and Frey (1999); Charness and Gneezy (2008)). Motivated by this evidence, we replicate the findings from dictator games literature and social distance literature, and we state our first hypothesis.

- **Hypothesis I.** *Principals share more with their recipient as the social distance between them decreases.*

- **Hypothesis II.** *Recipients expect more from the principal as the social distance between them decreases.*

With the next hypothesis, we anticipate principals' delegation decisions when social distance decreases. Recent research on delegation decisions shows that principals are more likely to delegate their decisions to less pro-social agents. The delegation decisions are usually driven by principals' preference for responsibility avoidance (Coffman (2011); Bartling and Fischbacher (2012); Oexl and Grossman (2013)). In these cases, principals delegate their decisions to shift the blame for a selfish decision. Principals may also use delegation as means to exploit a moral wiggle room. With this, principals find situational excuses to behave in a self-interested manner and deny any responsibility for the self-interested action (Dana et al. (2007); Larson and Capra (2009)). Based on Hypothesis

[19]The instructions are reproduced in Appendix A.2.

I, although principals can hire agents to take on self-interested decisions, they are also expected to give more to recipients as the social distance between them decreases. Given the evidence mentioned, we hypothesise that as the social distance between the principal and the recipient decreases, principals will be less likely to delegate their decisions to an agent. The principals will avoid the moral wiggle room and they will be more likely to take on the decision themselves. We state our third hypothesis below.

- **Hypothesis III.** *Principals are less likely to delegate their allocation decision to an agent as the social distance between principals and recipients decreases, ceteris paribus.*

In a final hypothesis, we look at the type of agent chosen for delegation by the principal. Previous studies on principals' delegation decisions show that principals always hire agents that behave less pro-social than the principals themselves (Hamman et al., 2010). Following the evidence from studies on social distance and pro-sociality, and the evidence from studies on delegation we outline our final hypothesis. Although delegation leads to principals hiring less pro-social agents, the decrease in social distance between principal and recipient will result in principals wanting to act more pro-social. We hypothesise that, conditional on delegation, principals are more likely to hire more pro-social agents, as the social distance between the principals and the recipient decreases.

- **Hypothesis IV.** *Conditional on delegating their allocation decision to an agent, principals are more likely to choose the more pro-social agent as the social distance between principals and recipients decreases.*

2.4 Result

In this section, we discuss the results of our experiment in detail. We start by analysing the exogenous manipulation of social distance, by looking at subjects' reported scores from the IOS scale. We then examine principals' sharing decisions, recipients' beliefs about principals' sharing decisions and agents' non-binding proposals to the principals. We then analyse principals' delegation decisions and their determinants across treatments and finally, we explore the direction of principals' delegation decisions across treatments, by observing whether principals delegate their decisions to a pro-social or selfish agent.

2.4.1 Does the exogenous manipulation of the social distance work?

To answer this question, we provide evidence of our exogenous social distance manipulation. We report scores from the IOS scale recorded on a 7-point scale, with 1 showing participants feeling completely distant and 7 showing participants feeling completely close to each other (1= 'completely distant', ..., 7= 'completely close'). These scores portray how close principals felt to recipients who are either their friends or a stranger. In a random order, we ask participants in the F-S treatment and the F-F treatment to indicate how close they feel to their friends and a random stranger in the room. In the S-S treatment, we only ask principals to indicate how close they feel to a random stranger in the room.

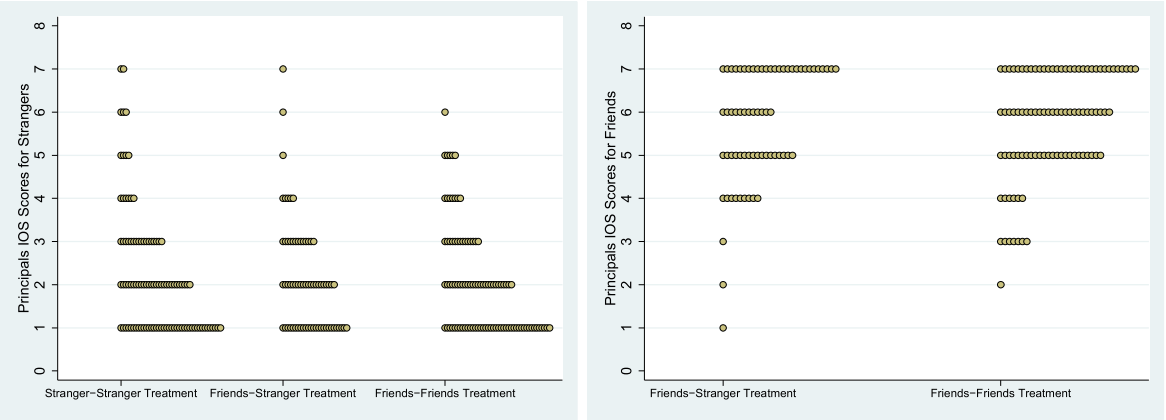


Figure 2.2: Distribution of principals' IOS scores across treatment

Figure 2.2 shows the frequency of principals stating their level of closeness to the recipient in each treatment. The graph on the left-hand side shows principals' closeness to a random stranger in both the F-S treatment and the F-F treatment. We observe that the majority of principals choose 1 as their level of closeness showing that they feel completely distant from a stranger. In the S-S treatment, 40.00% of subjects felt completely distant to a random stranger in the room. In the F-F treatment 43.75% and in the F-S treatment, 38.24% of subjects felt completely distant to a stranger. We also see a small percentage of principals who feel completely close to a stranger. In the S-S treatment, 2.00% of the principals, in the F-S treatment 1.47% of the principals and in the F-F treatment, 1.04% of the principals stated they feel close to a stranger in the room. The graph on the right hand-side shows how principals scored their closeness to their friends. In this case, most of the principals state that they feel completely close to the friend with whom they came to the lab. We observe that in the F-S treatment 39.71% of the

principals feel close to their friends while 1.47% of principals felt completely distant. In the F-F treatment, 33.33% of principals felt close to their friends and 1.04% of principals felt completely distant to their friends.

Table 2.1: Average scores from the IOS scale across treatments

	Average IOS scores towards a random stranger			Average IOS scores towards their friend		
	S-S Treatment	F-S Treatment	F-F Treatment	S-S Treatment	F-S Treatment	F-F Treatment
Mean	2.23	2.13	2.05	-	5.70	5.70
	(1.45)	(1.27)	(1.23)	-	(1.36)	(1.26)
Obs	100	68	96	-	68	96

Notes: Standard deviations are presented in parentheses. The IOS scores were recorded on a 7-point scale (1="Completely distant", ..., 7="Completely close").

In Table 2.1 we report the average IOS score for each treatment. To analyse principals' IOS scores in more detail, we test whether there are differences between principals' average IOS scores towards their friend and a stranger within each treatment. We use a Wilcoxon matched-pairs signed-rank test[20]. We first look at the difference between principals' IOS scores when they are paired with friends and when they are paired with strangers in the F-S treatment. Our results confirm a statistically significant difference between the two IOS scores (5.70 vs. 2.13, $p < 0.01$) in the F-S treatment and in the F-F treatment (5.70 vs. 2.05, $p < 0.01$). We can observe that the average score referring to friends are higher than strangers, indicating that principals rate their closeness to their friends higher than a stranger. We compare principals' average IOS scores in the F-S treatment with the F-F treatment, when principals are paired with their friends, using a Wilcoxon rank-sum (Mann-Whitney) test. We do not find a statistically significant difference (F-S treatment vs. F-F treatment: 5.70 vs. 5.70, $p = 0.8513$), meaning that regardless of the treatment (who principals are paired with), principals feel closer to their friends. We also do not find a significant difference between average IOS scores when principals are paired with strangers (F-S treatment vs. F-F treatment: 2.13 vs. 2.05, $p = 0.5925$), meaning that regardless of the treatment (who principals are paired with), principals feel distant to a stranger[21]. These results confirm that principals overall feel closer to their friends, hence the social distance between them is lower than when

[20]All tests reported in the chapter are two-sided.

[21]We also do not find a significant difference in average IOS scores, between S-S treatment and F-S treatment (Wilcoxon rank-sum (Mann-Whitney) test: 2.23 vs. 2.13, $p = 0.9378$) and between S-S treatment and F-F treatment (Wilcoxon rank-sum (Mann-Whitney) test: 2.23 vs. 2.05, $p = 0.5010$) when principals are paired with strangers

they are paired with strangers.

- **Result 1.** *In the F-F treatment and the F-S treatment, principals feel significantly closer towards their friends compared to strangers.*

2.4.2 Do subjects become more pro-social when social distance between principal and recipient is minimized?

Principals' Sharing Decisions

In this section, we present our findings from principals' sharing decisions across treatments. We first illustrate principals' sharing within each treatment using Figure 2.3. This figure presents the distribution of principals' sharing decisions across treatments. In the S-S treatment, 26% of the principals chose to give nothing to the recipient and 22% decided to share their endowment equally with the recipient. In the F-S treatment, the corresponding percentage of principals giving nothing is equal to 14.71%, while the percentage of them sharing half of their endowment is 22.06%. Looking at the F-F treatment, we can see that 61.46% of the principals decided to share half of their endowment and 13.54% of the principals decided to give nothing.

Principals' average sharing decision is reported in Table 2.2. Looking at the S-S treatment, we observe that principals share an average of £1.92 out of their £8.00 endowment with the recipient. In the F-S treatment, principals share an average of £1.87 and in the F-F treatment principals share an average of £3.03 with the recipient. To evaluate the difference between principals' sharing decisions we use a Wilcoxon rank-sum test. Comparing the average amount shared in F-F treatment with the average amount shared in S-S treatment (3.03 vs. 1.92, $p < 0.01$), we can see that principals share significantly more with their friends compared to strangers. These results hold when we compare the average amount share in the F-F treatment with the average amount share in the F-S treatment (3.03 vs. 1.87, $p < 0.01$). We do not find a statistically significant difference between the average amount shared in the F-S treatment and the S-S treatment (1.87 vs. 1.92, $p = 0.9088$)[22]. These results indicate that lower social distance between principals and recipients leads to more pro-social behaviour. Principals behave more generously only when they interact with their friends and not when they bring their friends to the lab (without interacting with them) and this is evident from the non-significant difference between average principals sharing behaviour in F-S treatment compared to S-S

[22]With our sample size, we have 80% power to detect effect size on the 5% significance level. Our results are not a consequence of the small sample size, indicated by ex-ante and ex-post power analyses.

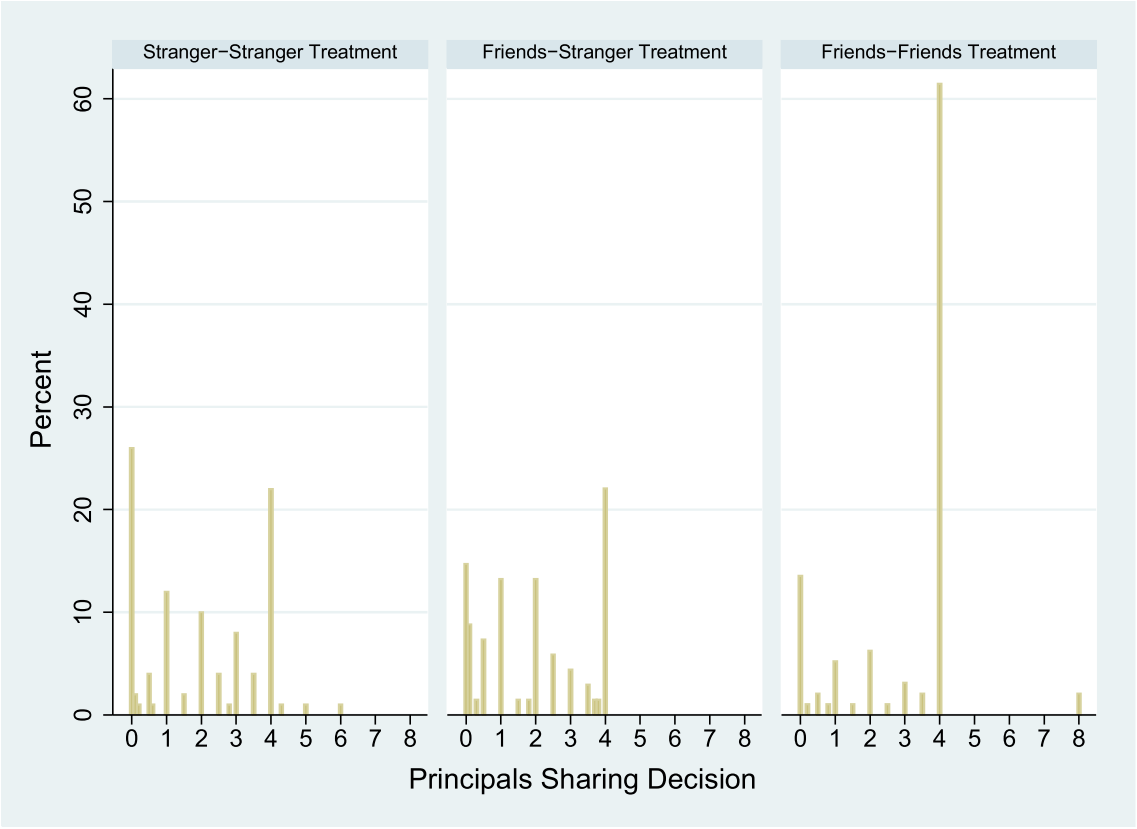


Figure 2.3: Distribution of principals sharing decisions across treatment

treatment. These results are in line with previous existing literature and support the first hypothesis stating that lower social distance leads to a more prosocial behaviour by dictators or in this case principals (e.g., Hoffman et al. (1996); Bohnet and Frey (1999); Charness and Gneezy (2008)).

Table 2.2: Average principals' sharing decisions across treatments

	S-S Treatment	F-S Treatment	F-F Treatment
Mean	1.92	1.87	3.03
	(1.66)	(1.54)	(1.72)
Obs	100	68	96

Notes: Standard deviations are presented in parentheses.

Further, we explore the determinants of principals' sharing decisions by performing a Tobit regression where principals' sharing decisions are restricted between £0.00 and £8.00. We report the results of the Tobit regression in Table 2.3 where the dependent variable is the amount principals share with their paired recipient. In Model (1) we in-

clude two dummy variables which capture the difference in principals' sharing behaviour across treatments. The dummy variable F-F treatment takes the value of 1 if principals made decisions for their friends and else it takes the value of 0. The dummy variable "F-S treatment" takes the value 1 if principals came to the lab with their friends but were not paired with them and else it will take the value 0. Our baseline treatment is the S-S treatment where principals make decisions for random strangers in the room. With Model (2) we test for the robustness of our regression results in Model (1) by controlling for gender while including the independent variables from Model (1). This will allow us to observe any gender effects that may influence principals' sharing decisions in each treatments[23].

Table 2.3: Determinants of principals' sharing decisions – Regression results

Dependent variable: Principals' sharing decision	Model (1)	Model (2)
F-F treatment	1.293****	1.275****
	(0.297)	(0.293)
F-S treatment	0.0771	0.100
	(0.308)	(0.309)
Female		0.506*
		(0.263)
Constant	1.633****	1.329****
	(0.220)	(0.280)
sigma		
constant	1.973****	1.961****
	(0.104)	(0.104)
N	264	264

Notes: Tobit estimates. Robust standard errors are presented in parentheses. The variable "F-F treatment" is a dummy variable that takes on the value 1 for the F-F treatment and 0 otherwise. The variable "F-S treatment" is a dummy variable that takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. We also control for gender using the Female dummy variable where the variable will take the value 1 if subjects are female and it will take the value 0 if they are male. */Sigma constant is the estimated standard error of the regression and it is comparable with the estimated root mean squared error reported in the OLS regression to show how good is the model.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

The regression results in Table 2.3 confirm our results from the non-parametric anal-

[23]In an ultimatum game Eckel and Grossman (2001) and in a dictator game Engel (2011) show that women give significantly more compared to men.

ysis. The F-F treatment dummy variable shows a positive and statistically significant coefficient. This suggests that principals share significantly more with their friends in the F-F treatment compared to the strangers in the S-S treatment. We do not find a statistically significant coefficient for the dummy variable F-S treatment. Controlling for principals' gender in Model (2) offers the same results and supports the robustness of our findings in Model (1). These results suggest that principals offer more generous shares to their friends compared to strangers. Also, principals' sharing behaviour depends on their pairing with the recipient. Regardless of whether principals bring their friends with them or if their friends are just in the room.

- **Result 2.** *Principals share significantly more with the recipient in the F-F treatment compared to both the S-S and F-S treatments.*

Recipients' Expectations from the Principals

We next observe the distribution of recipients' beliefs about principals' sharing decisions. Figure 2.4 shows that in the F-F treatment 8.33% of the recipients believe the principals will offer them nothing and 57.29% of the recipients believe that the principals will split their endowment equally. In the F-S treatment, 20.59% of the recipients expect to receive 0 while 23.53% of them expect to receive half of the principals' endowment. We can observe the same pattern from the F-S treatment in the S-S treatment where 20.00% of the recipient believe they will receive nothing from the principals and 25.00% of the principals believe they will receive an equal split from the principals. We report recipients' average beliefs about principals' sharing decisions across treatments in Table 2.4.

On average, recipients believe principals will share £3.03 of their endowment with them in the F-F treatment, £1.89 of their endowment in the F-S treatment and £2.18 of their endowment in the S-S treatment. By performing the Wilcoxon rank-sum test we find a statistically significant difference between recipients' expectations in the F-F treatment and the S-S treatment (3.03 vs. 2.18, $p < 0.01$). This difference is also observed when comparing recipients' beliefs in F-F treatment and their beliefs in F-S treatment (3.03 vs. 1.89, $p < 0.01$). We do not find a significant difference between recipients' expectations in the F-S treatment and their expectations in the S-S treatment (1.89 vs. 2.18, $p = 0.3377$).

Further, we investigate the determinants of recipients' beliefs using a Tobit regression. The dependent variable is recipients' beliefs about principals' sharing decisions and the

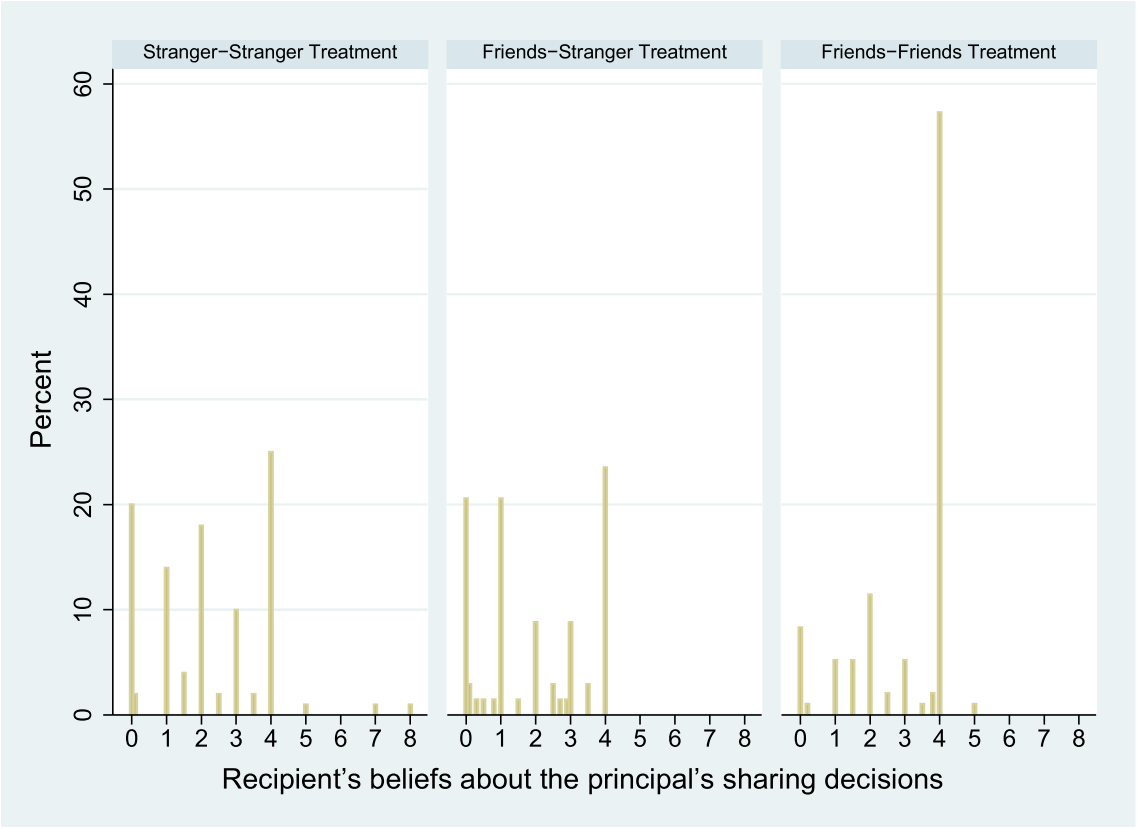


Figure 2.4: Distribution of recipients' beliefs about the principals sharing decisions across treatment

Table 2.4: Recipients' average beliefs about the principals sharing decisions across treatments

	S-S Treatment	F-S Treatment	F-F Treatment
Mean	2.18	1.89	3.03
	(1.69)	(1.54)	(1.39)
Obs	100	68	96

Notes: Standard deviations are presented in parentheses.

independent variables are the F-F treatment dummy variable and the F-S treatment dummy variable. In the F-F treatment, we observe principals' sharing decisions when principals are paired with their friends. In the F-S treatment, we observe principals' sharing decisions for a stranger when principals' friends are in the room. In the S-S treatment, we observe principals' sharing decisions for a stranger. The F-F treatment dummy variables capture the difference between recipients' beliefs in the F-F treatment and the S-S treatment and the F-S treatment dummy variable captures the difference

between recipients' beliefs in the F-S treatment compared to the S-S treatment. We include these two variables in Model (1), and we check the robustness of our results by including recipients' gender in Model (2).

Table 2.5: Determinants of Recipients' beliefs about principals' sharing decision – Regression results

Dependent variable: Recipients' beliefs about principals sharing decision	Model (1)	Model (2)
F-F treatment	0.961****	0.954****
	(0.255)	(0.255)
F-S treatment	-0.309	-0.304
	(0.306)	(0.307)
Female		0.148
		(0.236)
Constant	2.006****	1.918****
	(0.204)	(0.255)
sigma		
constant	1.795****	1.795****
	(0.0997)	(0.0995)
N	264	264

Notes: Tobit estimates. Robust standard errors are presented in parentheses. The variable "F-F treatment" is a dummy variable that takes on the value "1" for the F-F treatment and 0 otherwise. The variable "F-S treatment" is a dummy variable that takes on the value "1" for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. We also control for gender using the Female dummy variable where the variable will take the value 1 if subjects are female and it will take the value 0 if they are male. */Sigma constant is the estimated standard error of the regression and it is comparable with the estimated root mean squared error reported in the OLS regression to show how good is the model.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Our regression results in Table 2.5 confirm our findings from the non-parametric analysis where recipients believe that on average, principals share more with their friends in the F-F treatment compared to the S-S treatment. This is observed through the F-F treatment dummy variable's positive and statistically significant coefficient in Model (1). We do not find a significant coefficient for the F-S treatment dummy variable. Our results hold in Model (2) where we include the recipients' gender. These results show that on

average, recipients expect principals to share more with them as their social distance decreases[24].

- **Result 3.** *Recipients expect principals to share higher offers with them in the F-F treatment compared to both the S-S and F-S treatment.*

Social distance and agents' non-binding proposals to the principals

In this section, we focus on the results from subjects in the role of agents in the experiment. As mentioned, there are two agents in each session, and they offer principals non-binding proposals. We focus on agents' non-binding proposals and within a session, we categorise them into two groups: pro-social agent and selfish agent[25]. The agent who offers a more generous proposal to the principal is referred to as the pro-social agent and the agent who proposes a lower amount to the principal compared to the pro-social agent is referred to as the selfish agent in the session. In Figure 2.5 we can see the distribution of the pro-social and selfish agents' proposals to the principals across treatments. Looking at the pro-social agents' proposals, we can see that, more agents propose equal shares of the endowment in the F-F treatment compared to the S-S treatment and F-S treatment. On the other hand, selfish agents are more likely to propose a less than equal split of the endowment in all three treatments. In the S-S treatment, 58.00% of the selfish agents and in the F-S treatment 41.18% of the selfish agents offer nothing to the principal, while none of the pro-social agents in both treatments offer nothing to the principal. In the S-S treatment, 14.00% of the pro-social agents offer more than half of the endowment to the principal, however, the selfish agents always offer less than the equal split. We do observe that 58.83% of the pro-social agents and 17.65% of the selfish agents in the F-S treatment offer more than half of the endowment to the principal. In the F-F treatment, both pro-social agents and selfish agents make more generous offers to the principal. Although 10.42% of the selfish agents offer nothing, 12.50% of them offer more than an equal split. Similarly, 10.43% of the pro-social agents offer nothing while the number of equal offers increases significantly to 75.00% in the F-F treatment.

On average there are differences between pro-social and selfish agents' proposals in each treatment. In Table 2.6 pro-social agents proposed £2.66 in the S-S treatment while

[24]By computing Bonferroni's adjusted p-values we further strengthen our results to address the hypothesis I (p-value=0.000) and hypothesis II (p-value=0.000). These suggest that the results reported here are not the consequence of multiple hypothesis testing.

[25]We direct our focus to agents' non-binding proposals because it is the offer that helps the principals with their delegation decisions. Also, we do not find a significant difference between agents' non-binding proposals and their final decisions if they are selected to make a decision on behalf of the principals. The result for this is presented in Table 2.14 in Appendix B.

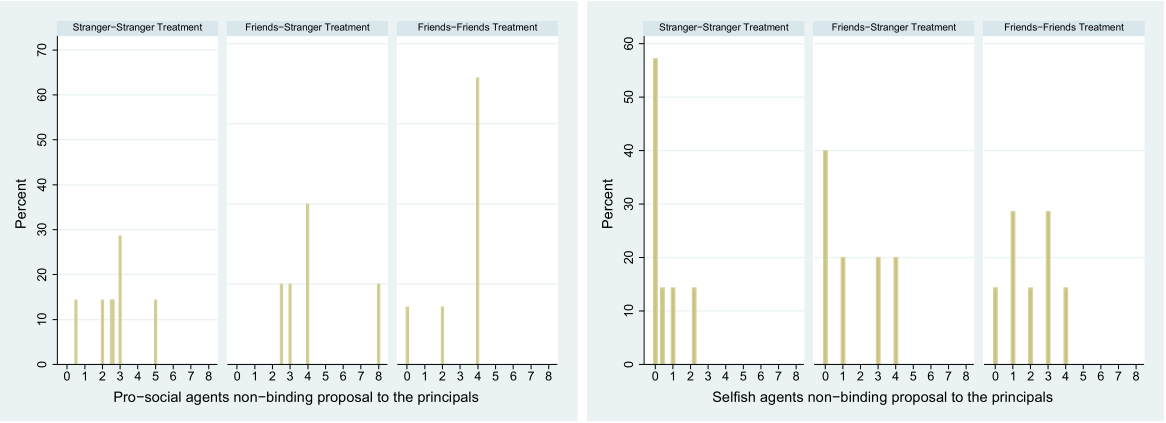


Figure 2.5: Distribution of pro-social and selfish agents across treatments

selfish agents proposed £0.53 (£2.66 vs. £0.53, Wilcoxon signed-rank test: $p < 0.01$). In the F-S treatment, the pro-social agents propose £4.30 and the selfish agents propose £1.60 (£4.30 vs. £1.60, Wilcoxon signed-rank test: $p < 0.01$). On average, pro-social agents propose £3.14 while the selfish agents propose £2.00 in the F-F treatment (£3.14 vs. £2.00, Wilcoxon signed-rank test: $p < 0.01$). In all treatments, we find significant differences between pro-social and selfish agents' proposals. We expect both agents to offer similar proposals, however, we can see that the pro-social agents propose more to the principals compared to the selfish agents in every treatment. We also study the agents' proposals for a given agent type across treatments. In particular, we study pro-social agents' proposals in each treatment and selfish agents' proposals in each treatment separately. By performing the Wilcoxon rank-sum test we find a statistically significant difference between pro-social agents' proposals in the F-S treatment and the S-S treatment (4.3 vs. 2.66, $p < 0.05$). We do not find a significant difference between pro-social agents' proposals in the S-S treatment and F-F treatments (2.66 vs. 3.14, $p = 0.1864$), and their proposals in the F-S treatment and the F-F treatment (4.3 vs. 3.14, $p = 0.5127$). Looking at selfish agents' proposals we find a statistically significant difference between selfish agents' proposals in the F-F treatment and their proposals in the S-S treatment (2.00 vs. 0.53, $p < 0.01$). We do not find a significant difference between selfish agents' proposals in the F-S treatment and F-F treatment (1.60 vs. 2.00, $p = 0.4709$) and their proposals in the S-S treatment compared to the F-S treatment (0.53 vs. 1.60, $p = 0.1318$). Given that the agents' proposals can increase their payoff by having more principals choose them, the treatment differences may affect the agents' proposals. This means that in the F-F treatment when the agents know the principals are paired with their friends, they might offer more pro-social proposals to the principals to increase the number of principals that choose them. For the selfish agent, the social

distance between principal and recipient matters when they are making offers to the principals, however, this does not matter for the pro-social agent. For the pro-social agents there is a difference between the offers they make to the principals when they have their friends in the room and when they do not have them around. We do not observe any difference in pro-social agents' offers, between the S-S and the F-F treatment.

Table 2.6: Prosocial and selfish agents' non-binding proposals to the principals across treatments

	S-S Treatment	F-S Treatment	F-F Treatment
Mean pro-social agents' proposal	2.66	4.3	3.14
	(1.29)	(2.04)	(1.51)
Mean selfish agents' proposal	0.53	1.60	2.00
	(0.80)	(1.71)	(1.36)
Obs	14	10	14

Notes: Standard deviations are presented in parentheses.

To observe the determinants of both the pro-social agents and the selfish agents, we run two sets of Tobit regressions. The results for these are presented in Table 2.7. In the first set of regressions, the dependent variable is the pro-social agents' proposals. In the second set of regressions, the dependent variable is the selfish agents' proposals. We use the treatment dummy variables as the independent variable in both sets of regressions. We also include the agents' gender in Model (2) and Model (4) to check the robustness of our results.

Regression results presented in Model (1) show a positive and significant coefficient for the dummy F-S treatment and a positive and non-significant coefficient for the dummy F-F treatment. Pro-social agents offer significantly more generous amounts in the F-S treatment compared to S-S treatment. In the F-F treatment, although pro-social agents offer more generous amounts, this is not statistically significant. These results are robust when we include the agents' gender in the model. Looking at Model (3) we observe the determinants of selfish agents' proposals. For the selfish agents' proposals, we see a positive and statistically significant coefficient for the F-F treatment and a weakly significant coefficient for the F-S treatment. Selfish agents propose more generous offers to the principals when the principal is paired with their friend. This confirms that selfish agents propose more to the principals in the F-F treatment. Our results are robust when agents' gender is included in the regressions. These findings suggest that pro-social agents are not influenced by the social distance between principal and recipient.

Table 2.7: Determinants of prosocial agent and selfish agent proposals – Regression results

Dependant variable:	Prosocial agent proposals	Prosocial agent proposals	Selfish agent proposals	Selfish agent proposals
	Model (1)	Model (2)	Model (3)	Model (4)
F-F treatmentt	0.389	0.276	2.230***	2.107***
	(0.583)	(0.619)	(0.672)	(0.710)
F-S treatment	1.765**	1.825**	1.535*	1.613*
	(0.809)	(0.814)	(0.897)	(0.900)
Female		0.507		0.561
		(0.585)		(0.671)
Constant	2.657****	2.440****	-0.361	-0.608
	(0.337)	(0.437)	(0.558)	(0.645)
sigma constant	1.696****	1.679****	1.776****	1.766****
	(0.295)	(0.294)	(0.230)	(0.227)
N	38	38	38	38

Notes: Tobit estimates. Robust standard errors are presented in parentheses. The variable "F-F treatment" is a dummy variable that takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable that takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics we include gender in our regression.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

However, selfish agents are influenced by the social distance between principals and recipients and this is reflected in the agents' offered proposals to the principals.

- **Result 4.** *Pro-social agents offer more generous proposals to the principals in the F-S treatment, while selfish agents offer more generous proposals to the principals in the F-F treatment.*

2.4.3 Are principals' delegation decisions affected by the decrease in principal and recipients' social distance?

In Hypothesis III we predict that principals will delegate less when the social distance between the principal and the recipient is minimised. We now examine the principals' delegation decisions across treatments. In the S-S treatment, we observe that 39%, and, in the F-S treatment 36.76% of principals, delegated to an agent, while in the F-F treatment only 28.13% of the principals delegate their decisions to an agent. By performing an equality of proportions test, we look for differences in the percentage of principals who

delegated to an agent[26]. Table 2.8 presents the proportion of principals who delegated across treatments. Comparing the proportion of principals who delegated in the F-F treatment with the proportion of principals delegated in the S-S treatment, we do not find a statistically significant difference (28.13% vs. 39.00%, $p = 0.1073$). A similar result is observed, between the proportion of principals delegated in F-S treatment and the proportion of principals delegated in S-S treatment (36.76% vs. 39.00%, $p = 0.7696$) and it extends to the proportion of principals delegated in F-F treatment and the proportion of principals delegated in F-S treatment (28.13% vs. 36.76%, $p = 0.2414$)[27].

Table 2.8: Number of Principles who decided to delegate their decision to an agent.

	S-S Treatment	F-S Treatment	F-F Treatment
Number of principals who delegated	39 (39.00%)	25 (36.76%)	27 (28.13%)
Number of principals who did not delegate	61 (61.00%)	43 (63.24%)	69 (71.88%)
Obs	100	68	96

Notes: Percentage of principals delegated and not delegated are presented in parentheses.

These statistical analyses do not control for factors that may affect principals' delegation behaviour. Hence, we perform regression analyses which allow us to control for factors affecting principals' delegation decisions. Our focus here is on the treatment dummy variables and principals' initial sharing decision. In this regression, we include principals' binary decision to delegate as the dependent variable and both of our treatment variables and principals' sharing decision as the independent variable. By including principals sharing decisions, we show how much principals' delegation decisions are driven by their social distance, given their initial sharing decisions[28].

[26]The specific test statistic is $Z = (p_1 - p_2)/Spc$, where p_i is the proportion of zero choices in sub sample i. Spc is an estimate of the standard error of $(p_1 - p_2)$, $Spc = \left\{(1 - pc)\left[(\frac{1}{N_1}) + (\frac{1}{N_2})\right]\right\}^{0.5}$. pc is an estimate of population proportion under the null hypothesis of equal proportions, $pc = (p_1 N_1 + p_2 N_2)/(N_1 + N_2)$, where N_i is the total number of all choices in sub sample i.

[27]In these tests the null hypothesis is that there is no difference in the proportion of principals delegated across treatments.

[28]Given that principals' delegation decision is driven by their initial sharing and the amount both agents propose to them, we control for not only the principals' initial sharing decision but also both pro-social and selfish agents' non-binding proposals. Since the agents' non-binding proposals are separate decisions, we do not include them in this regression however we do run a separate regression controlling for the selfish and pro-social agents' non-binding proposals and the difference between principals' sharing decisions while taking into consideration principals' social distance to their paired recipients. The results for these are presented in Table 2.16 and Table 2.17 of Appendix.B.2. and they are in line with our

Table 2.9 reports the results of three Probit regression models with marginal effects where the dependent variable is a binary variable being equal to 1 if a principal decides to delegate their decision to an agent and 0 otherwise. The independent variables included in the first model are the two treatment dummy variables: F-F treatment and F-S treatment. These dummy variables allow us to observe how principals' delegation decisions vary with social distance. We also include principals' initial sharing decisions in Model (2) while observing the treatment dummy variables. Principals make their delegation decisions knowing their initial sharing and the social distance between themselves and their recipients. In Model (3), we also include principals' gender to check for the robustness of our results.

Table 2.9: Determinants of principals' delegation decision – Regression results

Dependent variable: Principals delegation decision	Model (1)	Model (2)	Model (3)
F-F treatment	-0.108*	-0.171***	-0.172***
	(0.0655)	(0.0633)	(0.0631)
F-S treatment	-0.0213	-0.0193	-0.0185
	(0.0723)	(0.0703)	(0.0705)
Principals' Sharing Decision		0.0601****	0.0594****
		(0.0162)	(0.0163)
gender			0.0258
			(0.0586)
N	264	264	264

Notes: Probit estimates marginal effects reported in percentage points. Robust standard errors are presented in parentheses. The variable F-F treatment is a dummy variable that takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable that takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics, we include gender in our regression.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

These results capture the determinants of principals' delegation decisions. In line with our non-parametric analysis, we observe weakly significant results for both F-F treatment and no significant effect for the F-S treatment in Model (1). The results in this model suggest that variation in social distance weakly affects principals' delegation decisions. However, these results change when we include principals' sharing decisions to the regression. In Model (2) we not only include the treatment dummy variables but also include principals' sharing decisions. We observe a negative and statistically significant coefficient for the F-F treatment dummy variable. We do not find a significant coefficient for the F-S treatment dummy variable. We also observe a positive and signif-

findings in Table 2.9.

icant coefficient for principals' sharing decisions. These results suggest that, for a given sharing decision, principals are 17 percent less likely to delegate when they are paired with their friends. Although principals have the option to delegate their decisions to an agent when they are paired with their friends, they are less likely to do so. This is because principals generally share more generous amounts with their friends meaning that, they behave more pro-socially and refrain from acting in a selfish manner. We also find a statistically significant coefficient for principals' sharing decisions which indicates that principals are more likely to delegate when they share more with their recipients. Model (3) mirrors our results from Model (2) while controlling for principals' gender as a demographic[29]. This provides evidence in favour of the third hypothesis of our study.

- **Result 5.** *Principals are less likely to delegate their decision to an agent in the F-F treatment compared to the S-S and the F-S treatment.*

2.4.4 What type of agents do the principals delegate to?

Our findings from the previous section show that principals delegate less when they are paired with their friends compared to when they are paired with a stranger. In this section, we further analyse principals' delegation decisions, by observing the type of agent chosen by the principals in each treatment. The details in Table 2.10 present principals' average sharing before and after delegation across treatments. In the first row, we report the average amount principals share with the recipient before delegation. This is basically principals' initial sharing for subjects who delegated their decision to an agent. In the second row, we report the average amount agents proposed to the principals which lead to principals deciding to delegate their decisions[30]. In the S-S treatment principals who delegate initially offer the recipients an average of £2.34, while the agents offer an average of £0.90 to the principals (2.34 vs. 0.90, $p < 0.01$). In the F-F treatment, principals offer an average of £3.46 before delegation and agents propose an average of £2.93 to the principals (3.46 vs. 2.93, $p < 0.05$). For the F-S treatment, we see a similar pattern where principals offer an average of £2.44 before delegation and agents propose an average of £1.80 to the principals (2.44 vs. 1.80 $p < 0.05$).

[29]In Appendix.B. we run a probit regression observing principals' delegation decisions when controlling for the agents' proposals. In Table 2.16 we include both treatment dummy variables while controlling for principals' sharing decisions and both agents' proposals. We do not find the agents' proposals to significantly affect principals' delegation decisions in Table 2.16. We also run a separate regression in Table 2.17, where instead of the agents' proposals we include the difference between the principals' initial allocation and the agents' proposals. The difference between principals sharing and the agents' proposals shows how much agents deviated from principals' initial sharing which may have resulted in principals not choosing them. Our results are robust in both these regressions.

[30]This only includes subjects who delegated their decisions to an agent.

Table 2.10: Average principals' sharing decisions before and after delegation across treatments

	S-S treatment	F-S treatment	F-F treatment
Average initial allocation of principals who delegated	2.34 (1.69)	2.44 (1.37)	3.46 (1.42)
Average agent proposal chosen by principals	0.90 (1.10)	1.80 (2.08)	2.93 (1.36)
Obs	39	25	27

Notes: Standard deviations are presented in parentheses.

With this table, we can distinguish two main points. First, we see that in all treatments principals initially offer more to the recipient before delegation. This suggests principals initially share more generous offers with the recipients. They use delegation as a way to exploit the moral wiggle room and act selfish, for their own gain. This result is in line with existing literature (Hamman et al., 2010).

Second, we observe that, before delegation principals offer significantly more to the recipients in the F-F treatment compared to the S-S treatment (2.34 vs. 3.46, $p < 0.01$). The average amount agents proposed to the principals who delegated their decisions follows the same pattern (2.93 vs. 0.90, $p < 0.01$). Comparing principals' offers in the F-F treatment with the offers in F-S treatment (3.46 vs. 2.44, $p < 0.01$) and comparing agents' proposals to the principal in the F-F treatment and the F-S treatment (2.93 vs. 1.80, $p < 0.01$) present a statistically significant result. We also do not find a significant difference comparing principals' initial offers (2.44 vs. 2.34, $p = 0.8389$) and agents' proposals to the principals (1.80 vs. 0.90, $p = 0.1121$), in F-S treatment and S-S treatment. These results show that principals offer more to their recipients when they are paired with their friends compared to when they are paired with strangers, when they make the decision themselves and when they decide to delegate. Principals not only offer more but also, if they delegate, they select the more pro-social agent.

To formally test which agent's offer they select from across treatments, we use a Probit regression with marginal effects. We focus on principals who decided to delegate their decisions to agents (N = 91) and we display our results in Table 2.11. For the independent variables, we use the treatment dummy variables (F-F treatment and F-S treatment) to observe the role of social distance and we control for principals' initial sharing decisions. These intendant variables are identical to the regression models in Table 2.9. As a dependent variable, we include the principals' delegation to the pro-social agent, which

is a binary variable and takes the value 1 if the principal chooses the pro-social agent for delegation and 0 otherwise.

Table 2.11: Determinants of principal's delegation to pro-social agent – Regression results

Dependent variable: Principals delegation to pro-social agent	Model (1)	Model (2)	Model (3)
F-F treatment	0.430****	0.245**	0.251**
	(0.117)	(0.111)	(0.110)
F-S treatment	-0.111	-0.108	-0.0859
	(0.117)	(0.0947)	(0.101)
Principals Sharing Decision		0.149****	0.148****
		(0.0225)	(0.0232)
gender			0.0529
			(0.0883)
N	91	91	91

Notes: Probit estimates marginal effects reported in percentage points. Robust standard errors are presented in parentheses. The variable F-F treatment is a dummy variable that takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable that takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics, we include gender to our regression.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

The principals who decided to delegate, are more likely to hire a pro-social agent to make decisions when they are paired with their friends. This suggests that delegation to pro-social agents are driven by social distance. In Model (1) we see that principals who decided to delegate are 43 percent more likely to hire pro-social agents when they are paired with their friends compared to when they are paired with a stranger. These results are robust when we control for principals sharing decisions in Model (2) and Model (3). We see a positive and statistically significant coefficient for principals' sharing decisions which indicates that principals are 15 percent more likely to delegate their decision to a pro-social agent if principals sharing increases by one unit. This is positive and statistically significant at the 5% level[31]. We confirm the robustness of our results by

[31]In Appendix.B.2. we run a probit regression observing principals' delegation decision to a pro-social agent when controlling for the agent's proposals. In Table 2.18 we include both treatment dummy variables while controlling for principals sharing decisions and both agents' proposals. We find that principals delegate to a more pro-social agent when they are paired with their friends. However, the

including principals' gender to the final model[32].

- **Result 6.** *Conditional on delegation, principals are more likely to choose the more pro-social agent for delegation in the F-F treatment compared to the S-S and F-S treatment.*

2.5 Conclusion

Our study contributes to the existing literature on delegation, where individuals delegate decisions to exploit the moral wiggle room and shift the blame of a self-interested action. We build on the Hamman et al. (2010) work and create a principal-agent setting where social distance between principals and recipients varies. To vary the social distance, we manipulate the level of closeness between principal and recipient by inviting them to bring a friend with them. In this case, subjects will be paired in groups where they have a history of interaction. We then provide the principals with the option to either make allocation decisions themselves or hire agents to make decisions on their behalf.

We find that close social interactions play an important role in shaping individuals' interactive behaviour. Minimising the social distance between individuals, may reduce emotional distance (Batson et al., 1997) and create a sense of closeness (Gachter et al., 2019), which leads to more pro-social decisions. In our case, the decrease in social distance between principal and recipient leads to more generous offers from the principals. We also observe higher expectations from the recipients. The novel finding of our study shows the significant role of social distance in the presence of a moral wiggle room. We observe that principals are less likely to delegate their decisions to agents when social distance between them and the recipient is minimised. From this finding, one might conjecture that delegation cannot be used as a moral wiggle room when individuals are at a close social distance to each other. However, observing delegation decisions in more detail, when social distance is minimised shows that if principals do delegate their decisions, they are more likely to hire a more pro-social agent to decide on their behalf.

higher the pro-social agents' proposals are, the less likely it is that they will be selected for delegation by the principal. We also run a separate regression in table 2.19 where instead of the agents' proposals we include the difference between the principals' initial allocation and the agents' proposals. The difference between principals sharing and the agents' proposals shows how much agents deviated from principals' initial sharing which may have led to principals not choosing them. We find that the higher the difference between principals' initial sharing and the pro-social agents' non-binding proposals, the more likely that principals will hire the pro-social agents. Our results are robust in both these regressions.

[32]Our results are not a consequence of multiple hypothesis testing. Given Bonferroni's adjusted p-values, we can address hypothesis III (p-value=0.251) and hypothesis IV (p-value=0.000) and further strengthen our results.

In other words, when delegating, principals hire agents who offer less than their initial allocation but offer more than the other agent. In this case, delegation may be used as a credit seeking device (Steffel et al., 2016) where principals take credit for a decision that is considered moderately pro-social while maintaining self-interested preferences. Principals in this case are exploiting the moral wiggle room while not feeling responsible for the decision made.

While our results illustrate the role of social distance in delegation, they also highlight an important limitation. Although these decisions clearly show the effect of minimizing social distance on principals sharing and delegation behaviour, they cannot provide a clear explanation for principals' pro-social behaviour. We cannot distinguish if this result is due to preference-based altruism (Andreoni, 1990) or if this is the result of preferences over payoff distributions (Fehr and Schmidt, 1999); (Charness and Rabin, 2002). Further study on this will shed light on the main mechanism behind this behaviour and it will provide a better understanding of decisions in an interactive environment when there is the option to delegate.

These results have interesting implications for shaping workplace interactions and principal-agent relationships. In a workplace environment, principals are more generous towards recipients when they have an existing social relationship, and this does not change even in the presence of a moral wiggle room. Constant communication and engagement in the workplace create a closer social relationship between individuals and lead to principals behaving more altruistically towards others. Principals will be less likely to take on self-serving actions, even when they know that they will not be blamed or punished for it. Even in situations where principals prefer delegation, they hire agents that behave more pro-social compared to others. These results suggest that, in an interactive environment, delegation is probably not the most efficient way to implement self-interested decisions.

2.6 Appendix

2.6.1 Appendix A. Experimental Material

Appendix A contains the invitation letters sent to the subjects (Appendix A.1) and the general instructions used in the experiment (Appendix A.2). Differences across treatments are indicated in square brackets.

A.1 Invitation letters

[**Invitation Letter for the Stranger-Stranger Treatment**]

Hello #fname# #lname#!

You are invited to participate in an experiment in our laboratory.

The sessions are scheduled for the following times:

#sessionlist#

If you want to participate, you can register by clicking on the following link:

#link#

(If you cannot click on the link, copy it to the clipboard by selecting it, right-click and choosing "Copy", and then paste it into the address line in your browser by right clicking there and choosing "Paste").

In order to participate, you have to be registered for the session. Please arrive 5 minutes before the scheduled time and bring an ID card with you.

Please note: people that sign up to a session and do not turn up cause us problems; sign up to a session only if you are sure you can attend it. We hope to see you soon in one of our sessions.

Best regards, the BEEL team

[Invitation letter for the Friends-Friends Treatment and the Friends-Stranger Treatment]

Hello #fname# #lname#!

You are invited to participate in an experiment in our laboratory. We would like to invite YOU plus ONE of your friends to take part in our coming experiment.

IMPORTANT INFORMATION

To participate in this experiment, YOU are required to bring ONE other person who knows you. Your friend needs to

1.…be someone you know (e.g. a friend, a housemate, someone on your course etc.).

2.…be someone who knows you (e.g. a friend, a housemate, someone on your course etc.).

3.…be able to attend the session you have signed up for.

The sessions are scheduled for the following times:

#sessionlist#

Both you and your friend can only participate in ONE of the above sessions. If YOU plus your FRIEND would like to participate, please click on the link below to sign up to the session of your choice. After signing up, reply to this e-mail to communicate the full name of your FRIEND who will participate (Your friend does not need to sign up, but you must ensure that s/he attends the session with you).

#link#

(If you cannot click on the link, copy it to the clipboard by selecting it, right-click and choosing "Copy", and then paste it into the address line in your browser by right clicking there and choosing "Paste".)

In order to participate, you have to be registered for the session. Please arrive 5 minutes before the scheduled time and bring an ID card with you.

Please note: people that sign up to a session and do not turn up cause us problems; sign up to a session only if you are sure you can attend it and that YOU are able to bring ONE friend as well. If you sign up please make sure YOU and your FRIEND do attend.

We hope to see you soon in one of our sessions.

Best regards,The BEEL team

A.2 Instructions

General Instructions

Welcome! You are about to take part in a decision-making experiment. This experiment is run by the "Birmingham Experimental Economics Laboratory" and has been financed by various research foundations. Just for showing up you have already earned £2.50. You can earn additional money depending on the decisions made by you and other participants. It is therefore very important that you read these instructions with care.

It is important that you remain silent and do not look at other peoples work. If you have any questions, or need assistance of any kind, please raise your hand and an experimenter will come to you. If you talk, laugh, exclaim out loud, etc., you will be asked to leave and you will not be paid. We expect and appreciate your following of these rules.

We will first jointly go over the instructions. After we have read the instructions, you will have time to ask clarifying questions. We would like to stress that any choices you make in this experiment are entirely anonymous. Please do not touch the computer or its mouse until you are instructed to do so. Thank you.

Role Description in the Experiment

During the experiment, participants will be assigned the role of either Participant A, Participant B or Participant C. In total, there are 18 participants in the room: 8 of them will be Participant As, 8 of them will be Participant B's and 2 of them will be Participant Cs.

[FRIENDS-FRIENDS TREATMENT: If you are assigned the role of Participant A or Participant B you will be in a group with your friend (whom you came to the lab with).]

[FRIENDS-STRANGER TREATMENT: If you are assigned the role of Participant A or Participant B you will be in a group with a random person in the room who is not your friend.]

[STRANGER - STRANGER TREATMENT: If you are assigned the role of Participant A or Participant B you will be in a group with a random person in the room.]

You will remain in the same group for the entire experiment. At the beginning of the experiment you will be asked to make decisions considering both roles, Participant A and Participant B. Your final role will be determined randomly at the end of the experiment. If you are assigned the role Participant C, you will not be paired with anyone and you

will be asked to make decisions on behalf of Participant A. You will remain in the same role for the entire experiment and you will be paid based on the decisions you make in this role.

Decision Making

Participant A will be endowed with £8.00 and will be asked to make an allocation decision between him/herself and Participant B. In particular, Participant A will be asked to indicate how much of the £8.00 s/he would like to give to Participant B (using amounts up to one decimal point). Any remaining amount (out of the £8 endowment) will be kept by Participant A. Participant B has no option but to accept Participant A's decision during the experiment.

If you are assigned the role of Participant C, you will either be Participant C1 or Participant C2. You will be asked to propose an allocation to Participant A. You will have to state how much of Participant A's £8.00 you would allocate to Participant B (using amounts up to one decimal point). Following your proposal, Participant A will be informed of the proposed allocation presented by each of the two Participants Cs. Participant A has then to decide either to send his own allocation as the final allocation to Participant B or choose one of the two Participant Cs to make the final allocation on his/her behalf. Participant C will then need to make the final allocation to Participant B on behalf of Participant A. If either of Participant Cs are chosen to make the allocation decision they will be able to send any amounts from the £8.00 of Participant As endowment (using amounts up to one decimal point). The amounts they send can be the same or different from their first proposed allocation.

Payment

As described above, at the end of the experiment, the computer will assign either the role of Participant A or Participant B at random. Participants deciding under the role of Participant C will be informed at the beginning of the experiment.

Participant A: If you are assigned the role of Participant A, your earnings will be your initial endowment minus the amount given to Participant B. The amount given to Participant B can be either your initial allocation or the final allocation made by Participant C on your behalf.

Participant B: If you are assigned the role of Participant B, your earnings will be the amount given to you. The amount given to you can be either Participant A's initial allocation or the final allocation made by Participant C on behalf of Participant A.

Participant C: If you are assigned the role of Participant C, you are given £5.00 as an initial endowment. You can earn more or less money depending on how many Participant As choose you to make the final allocation on their behalf. In particular, if you are not chosen by any Participant A, you will lose £0.60 and your earnings will be £4.40. If you are chosen by one Participant A, you will lose £0.30 and your earnings will be £4.70. If you are chosen by two Participant As, you will not lose anything and your earnings will be £5.00. If you are chosen by more than two Participant As, you will receive £0.30 for each Participant A, who chooses you.

At the end of the experiment, the total amount you have earned will privately be paid to you in cash.

Do you have any questions? Please raise your hand and an experimenter will come to your desk. Please do not ask any question out loud.

2.6.2 Appendix B. Additional data analysis

Appendix B provides additional data analysis for this chapter.

B.1. Distribution of agents' non-binding proposals across treatments

In addition to previous results, we take a deeper look into the agents' proposals to the principals. Figure 2.6 presents the distribution of agents' non-binding proposals where most of the agents propose higher shares to the principals in the F-F treatment. In this treatment, 14.29% of the agents propose nothing to the principal while 42.86% of them proposed an equal split of the principal's endowment. In the F-S treatment the number of agent's proposing nothing to the principal's increases to 20% and in the S-S treatment this increases to 28.57%. Compared to the F-F treatment, in the F-S treatment 30% and in the S-S treatment around 8% of agents propose equal shares of the endowment to the principals.

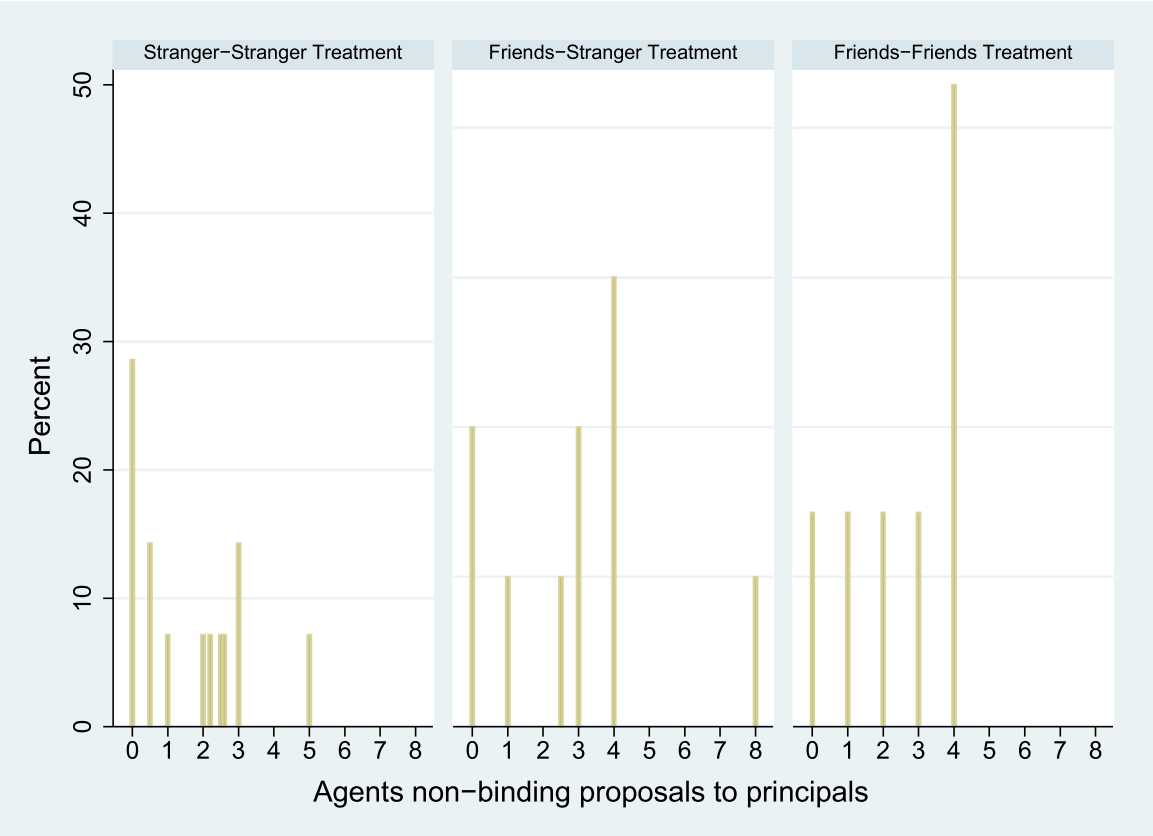


Figure 2.6: Distribution of Agents' non-binding proposals to the principals across treatment

The average proposals offered to principals are detailed in Table 2.12. Agents propose

an average of £2.57 to the principals in the F-F treatment, while in the F-S treatment and S-S treatment they propose £2.95 and £1.59 to the principals. We perform a Wilcoxon rank-sum test, to find differences in amounts agents propose to principals across treatments. Looking at proposals in F-F treatment and proposals in S-S treatment we find a very weak difference (2.57 vs. 1.59, $p = 0.0940$), however comparing proposals in the F-F treatment with F-S treatment (2.57 vs. 2.95, $p = 0.9037$) and comparing proposals in F-S treatment with proposals in S-S treatments (2.95 vs. 1.59, $p = 0.1098$) we do not find a statistically significant difference.

Table 2.12: Average agents' non-binding proposals to the principals across treatments

	S-S Treatment	F-S Treatment	F-F Treatment
Mean	1.59	2.95	2.57
	(1.54)	(2.36)	(1.55)
Obs	14	10	14

Notes: Standard deviations are presented in parentheses.

We further test parametrically whether agents' proposals differ significantly between treatments using a Tobit regression. We estimate two models where the dependent variable is agents' non-binding proposals to the principal and the independent variables are the F-F treatment dummy variable and F-S treatment dummy variable. These variables take the value 1 if agents make their decisions in the corresponding treatment and else it will take the value 0. We use Model (2) to include demographic variables in our model and check the robustness of our findings in Model (1). The result of this regression is presented in Table 13 below.

Based on the above analysis, we state our next finding. The results of Table 2.13 show that both dummy variables have a coefficient that is statistically not significant at conventional levels. This is confirmed in Model (2) of the table when controlling for participants' demographics. Across treatments, we do not find significance in terms of how many agents propose the principals.

- *On average, agents' proposals to the principals do not significantly differ across treatments.*

Table 2.13: Agents non-binding proposals to the principals – Regression results.

Dependent Variable: Agents non-binding proposal	Model (1)	Model (2)
F-F treatment	1.211	1.007
	(0.754)	(0.758)
F-S treatment	1.613	1.730
	(1.080)	(1.084)
Female		0.923
		(0.720)
Constant	1.205**	0.801
	(0.589)	(0.722)
sigma		
constant	2.169****	2.137****
	(0.392)	(0.399)
N	38	38

Notes: Tobit estimates. Robust standard errors are presented in parentheses. The variable F-F treatment is a dummy variable which takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable which takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics we include gender to our regression.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table 2.14: Average Agents non-binding proposals and Agents final offer across treatments

	Agents Non-Binding Proposals (before delegation)	Agents final Offer (after delegation)	Wilcoxon rank-sum test
S-S treatment	1.59	2.52	$p < 0.05$
	(1.54)	(1.36)	
F-S treatment	2.95	1.36	$p = 0.1934$
	(2.36)	(1.75)	
F-F treatment	2.57	3.39	$p = 0.5035$
	(1.55)	(1.61)	

Notes:Standard deviations are presented in parentheses.

B.2. Additional regressions for principals delegation decisions across treatments

Table 2.15: Determinants of principals delegation decision – Regression results

Dependent variable: Principals delegation decision	Model (1)	Model (2)	Model (3)
F-F treatment	-0.300	-0.504**	-0.506**
	(0.187)	(0.199)	(0.199)
F-S treatment	-0.0588	-0.0553	-0.0529
	(0.201)	(0.203)	(0.203)
Principals Sharing Decision		0.171****	0.169****
		(0.0491)	(0.0494)
Female			0.0735
			(0.167)
Constant	-0.279**	-0.618****	-0.658****
	(0.127)	(0.163)	(0.189)
N	264	264	264

Notes: Probit estimates. Robust standard errors are presented in parentheses. The variable F-F treatment is a dummy variable which takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable which takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics we include gender to our regression.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table 2.16: Determinants of principal's delegation decision when controlling for principals sharing decisions and agents non-binding proposals – Regression results

Dependent variable: Principals delegation decision	Model (1)	Model (2)	Model (3)	Model (4)
F-F treatment	-0.300	-0.504**	-0.391*	-0.393*
	(0.187)	(0.199)	(0.228)	(0.228)
F-S treatment	-0.0588	-0.0553	0.114	0.114
	(0.201)	(0.203)	(0.218)	(0.218)
Principals Sharing Decision		0.171****	0.177****	0.176****
		(0.0491)	(0.0491)	(0.0495)
Pro-social agent proposal			-0.0871	-0.0862
			(0.0647)	(0.0649)
Selfish agent proposal			-0.0436	-0.0437
			(0.0812)	(0.0812)
Female				0.0610
				(0.168)
Constant	-0.279**	-0.618****	-0.383*	-0.418*
	(0.127)	(0.163)	(0.225)	(0.246)
N	264	264	264	264

Notes: Probit estimates. Robust standard errors are presented in parentheses. The variable F-F treatment is a dummy variable which takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable which takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics we include gender to our regression.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table 2.17: Determinants of principal's delegation decision when controlling for the difference between principals sharing decisions and agents non-binding proposals – Regression results

Dependent variable: Principals delegation decision	Model (1)	Model (2)	Model (3)	Model (4)
F-F treatment	-0.504**	-0.334*	-0.391*	-0.393*
	(0.199)	(0.199)	(0.228)	(0.228)
F-S treatment	-0.0553	0.145	0.114	0.114
	(0.203)	(0.210)	(0.218)	(0.218)
Principals Sharing Decision	0.171****		0.0467	0.0458
	(0.0491)		(0.0912)	(0.0915)
Difference between principals sharing and pro-social agents proposal		0.0949	0.0871	0.0862
		(0.0632)	(0.0647)	(0.0649)
Difference between principals sharing and selfish agents proposal		0.0670	0.0436	0.0437
		(0.0666)	(0.0812)	(0.0812)
Female				0.0610
				(0.168)
Constant	-0.618****	-0.319*	-0.383*	-0.418*
	(0.163)	(0.186)	(0.225)	(0.246)
N	264	264	264	264

Notes: Probit estimates. Robust standard errors are presented in parentheses. The variable F-F treatment is a dummy variable which takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable which takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics we include gender to our regression.

* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.3. Additional regressions for principals delegation to pro-social agent across treatments

Table 2.18: Determinants of principal's delegation to pro-social agent – Regression results

Dependent variable: Principals delegation to pro-social agent	Model (1)	Model (2)	Model (3)
F-F treatment	1.148****	0.915**	0.942**
	(0.336)	(0.401)	(0.401)
F-S treatment	-0.339	-0.443	-0.353
	(0.357)	(0.376)	(0.402)
Principals Sharing Decision		0.629****	0.628****
		(0.132)	(0.133)
Female			0.225
			(0.377)
Constant	-0.502**	-2.270****	-2.444****
	(0.211)	(0.466)	(0.559)
N	91	91	91

Notes: Probit estimates. Robust standard errors are presented in parentheses. The variable F-F treatment is a dummy variable which takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable which takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics we include gender to our regression.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table 2.19: Determinants of principal's delegation to pro-social agent when controlling for agents non-binding proposals – Regression results

Dependent variable: Principals delegation to pro-social agent	Model (1)	Model (2)	Model (3)	Model (4)
F-F treatment	1.148****	0.915**	1.151***	1.155***
	(0.336)	(0.401)	(0.434)	(0.433)
F-S treatment	-0.339	-0.443	0.194	0.208
	(0.357)	(0.376)	(0.431)	(0.451)
Principals Sharing Decision		0.629****	0.766****	0.764****
		(0.132)	(0.144)	(0.148)
Pro-social agent proposal			-0.435***	-0.432**
			(0.166)	(0.170)
Selfish agent proposal			0.214	0.212
			(0.161)	(0.164)
Female				0.0409
				(0.411)
Constant	-0.502**	-2.270****	-1.806****	-1.839***
	(0.211)	(0.466)	(0.522)	(0.591)
N	91	91	91	91

Notes: Probit estimates. Robust standard errors are presented in parentheses. The variable F-F treatment is a dummy variable which takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable which takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics we include gender to our regression.

* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table 2.20: Determinants of principal's delegation to pro-social agent when controlling the difference between principals sharing decisions and agents non-binding proposals – Regression results

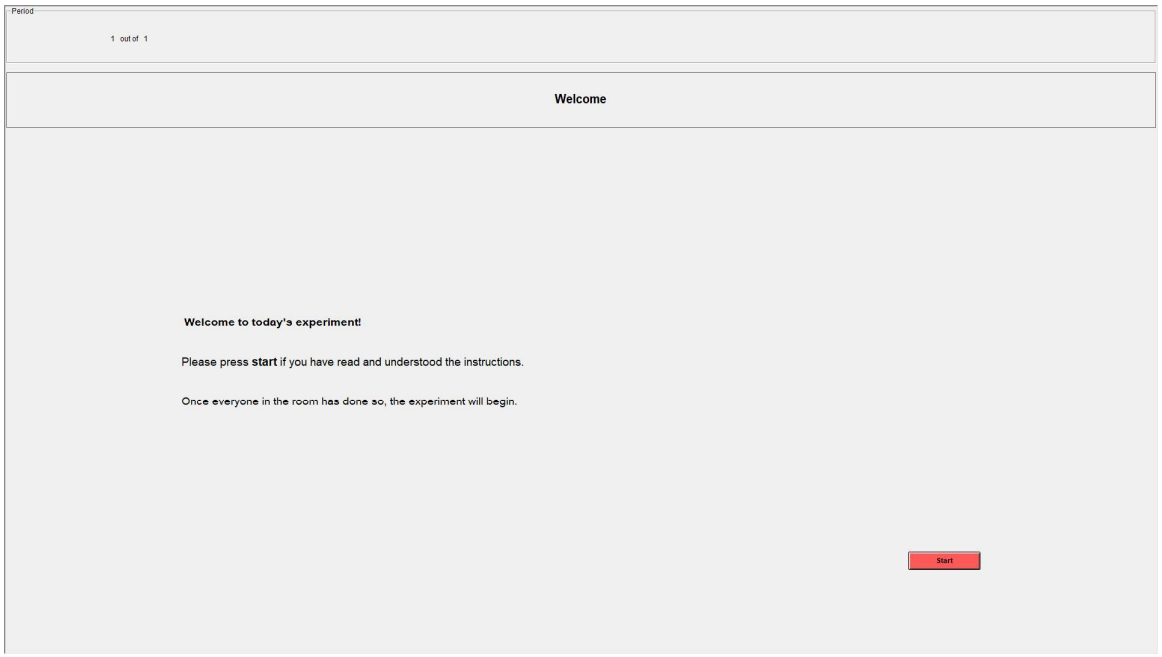
Dependent variable: Principals delegation to pro-social agent	Model (1)	Model (2)	Model (3)	Model (4)
F-F treatment	0.915**	1.663****	1.151***	1.155***
	(0.401)	(0.381)	(0.434)	(0.433)
F-S treatment	-0.443	0.498	0.194	0.208
	(0.376)	(0.390)	(0.431)	(0.451)
Principals Sharing Decision	0.629****		0.545***	0.545***
	(0.132)		(0.204)	(0.204)
Difference between principals sharing and pro-social agents proposal		0.518**	0.435***	0.432**
		(0.205)	(0.166)	(0.170)
Difference between principals sharing and selfish agents proposal		0.0263	-0.214	-0.212
		(0.132)	(0.161)	(0.164)
Female				0.0409
				(0.411)
Constant	-2.270****	-0.833***	-1.806****	-1.839***
	(0.466)	(0.306)	(0.522)	(0.591)
N	91	91	91	91

Notes: Probit estimates. Robust standard errors are presented in parentheses. The variable F-F treatment is a dummy variable which takes on the value 1 for the F-F treatment and 0 otherwise. The variable F-S treatment is a dummy variable which takes on the value 1 for the F-S treatment and 0 otherwise. The baseline category is the S-S treatment. For demographics we include gender to our regression.

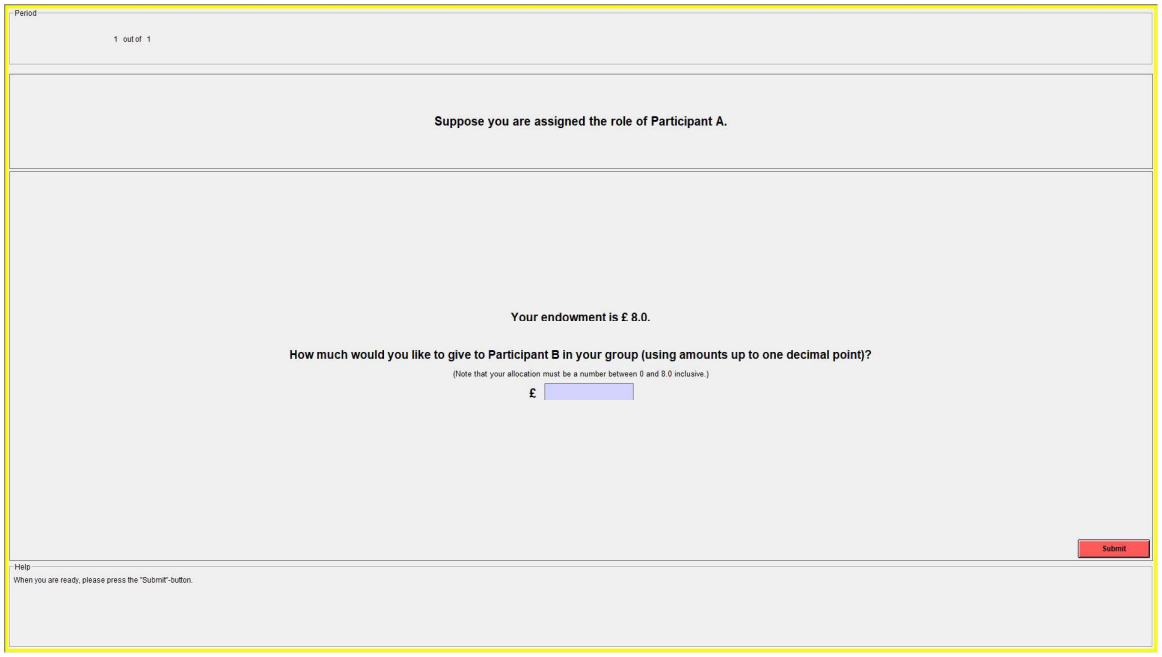
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

2.6.3 Appendix C. Experiment Screen-shots

Welcome screen



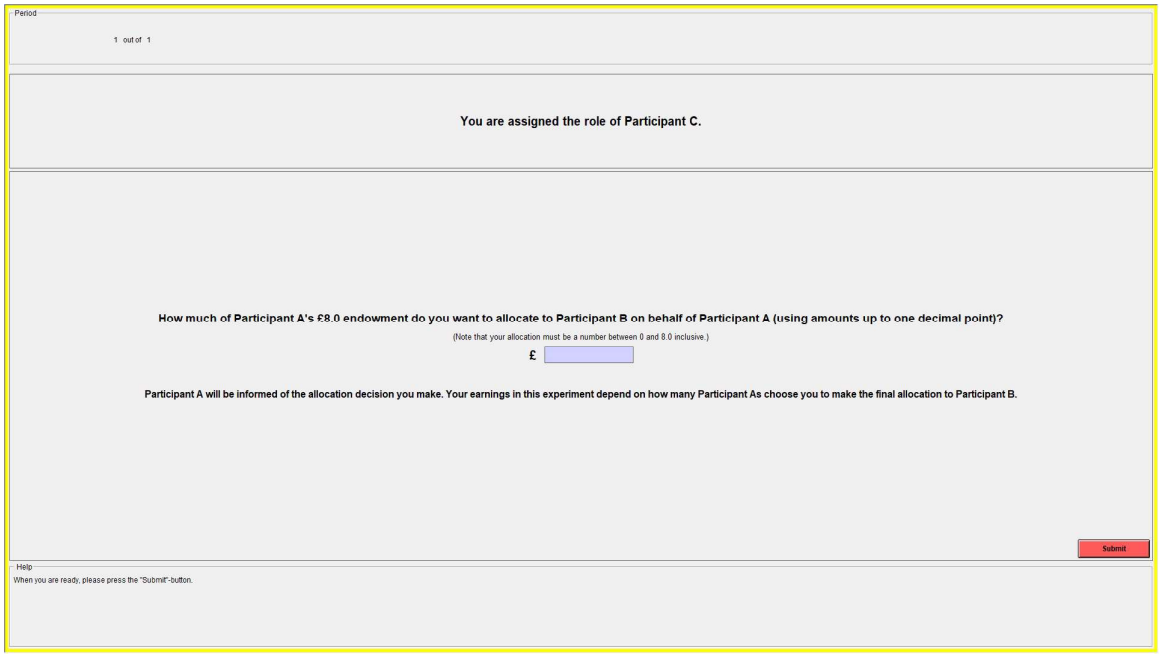
Principals Sharing Decision



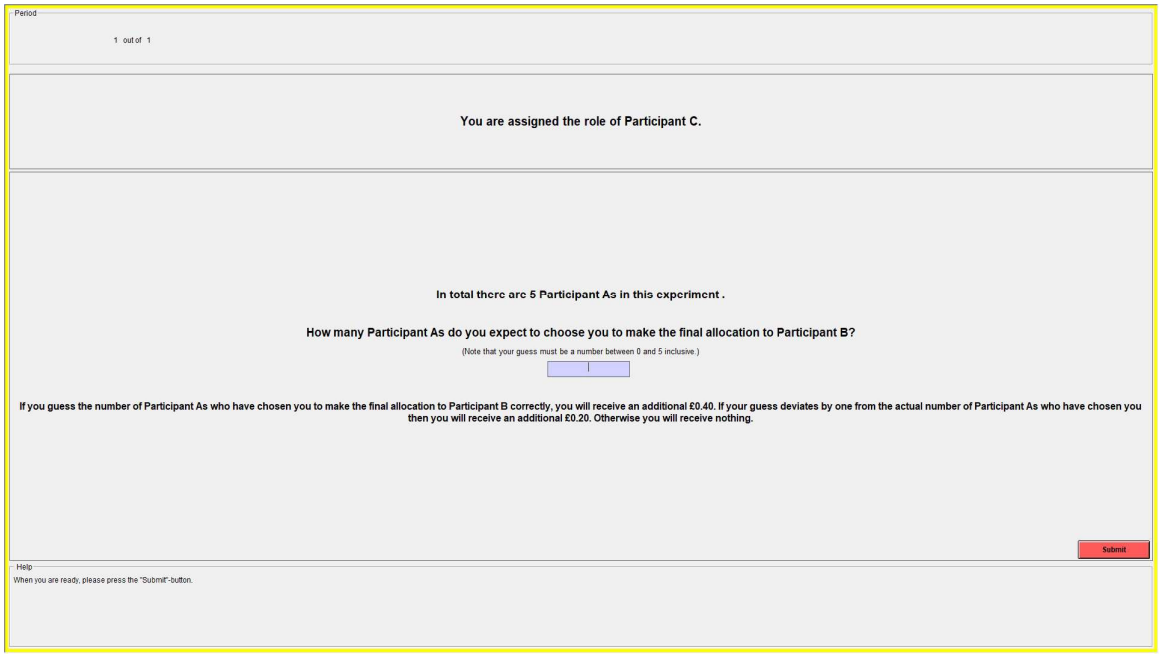
Recipients expectation about Principals Sharing Decision



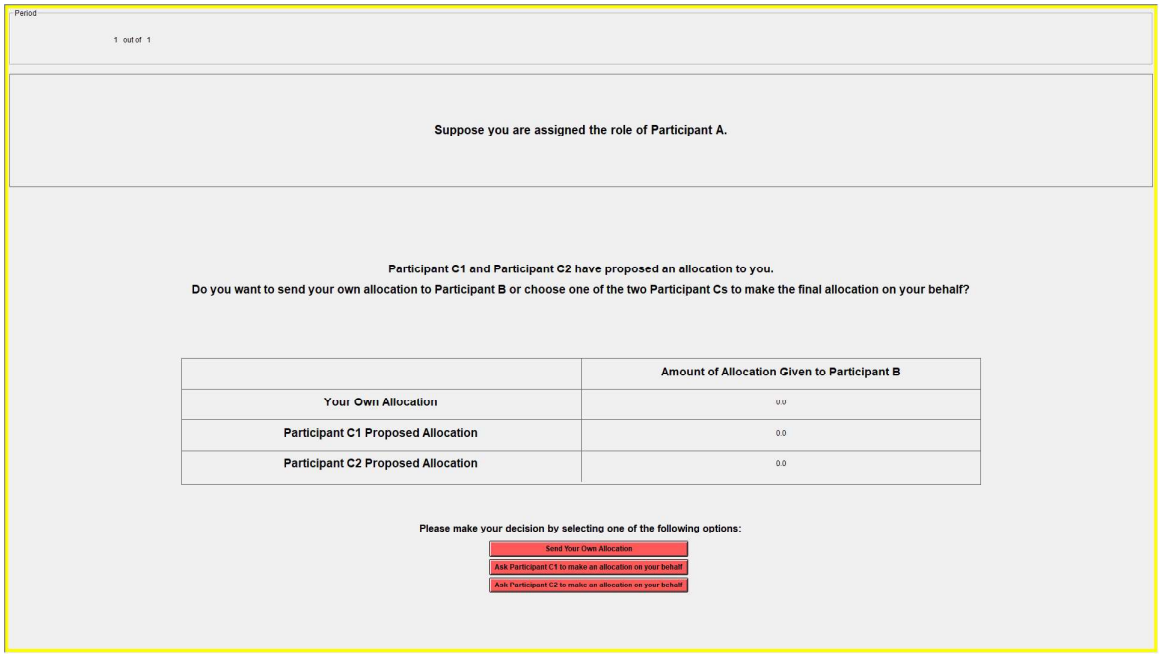
Agents Proposals to the principals



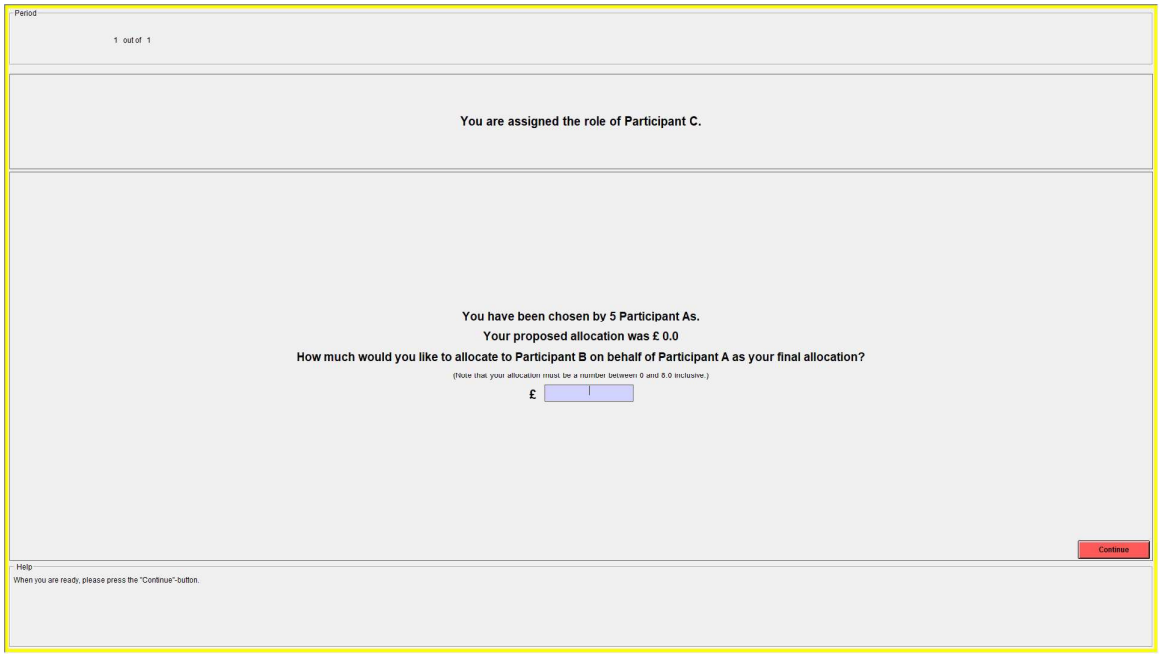
Agents beliefs about number of principals who choose them



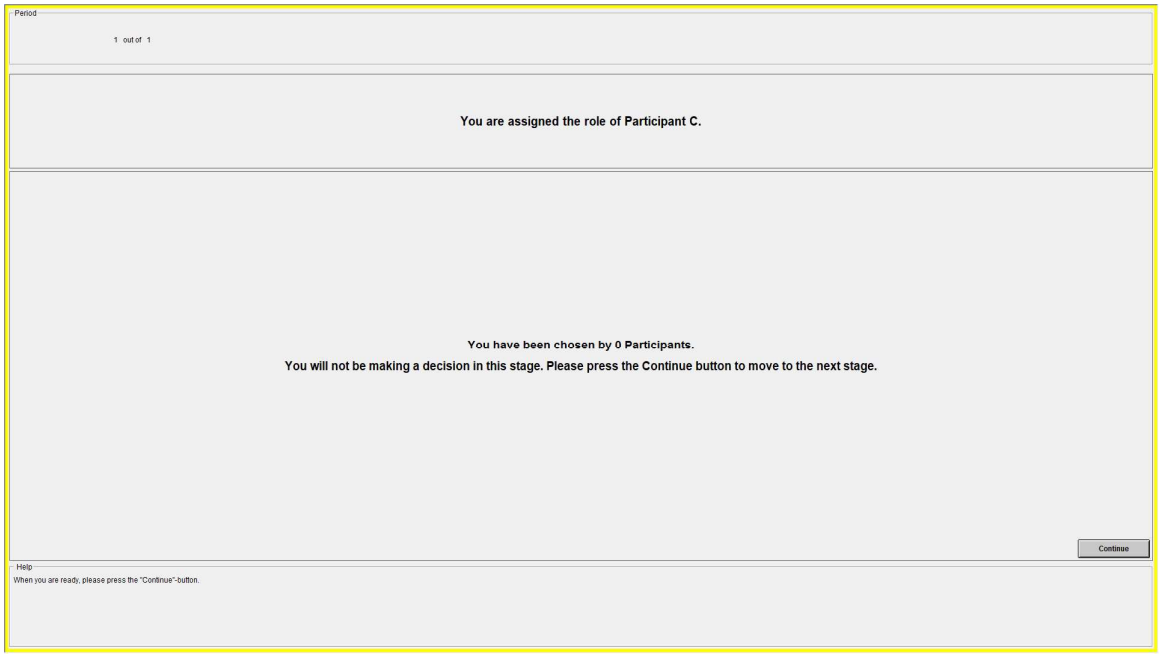
Principals Delegation Decision



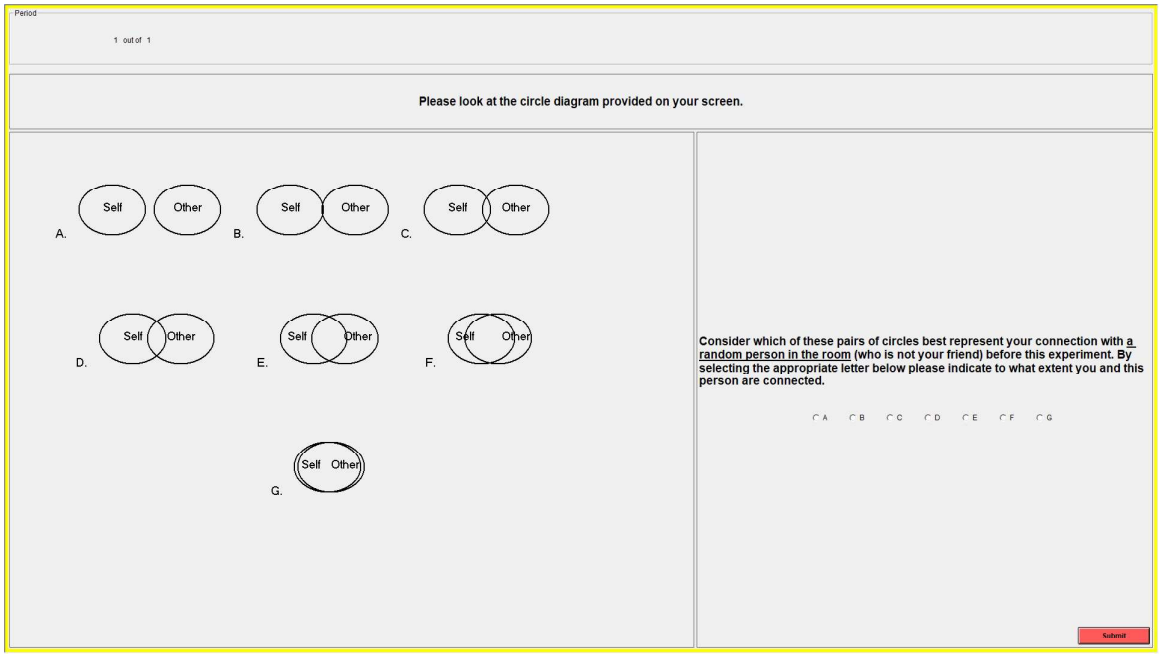
Agents Decisions once they are chosen to delegate



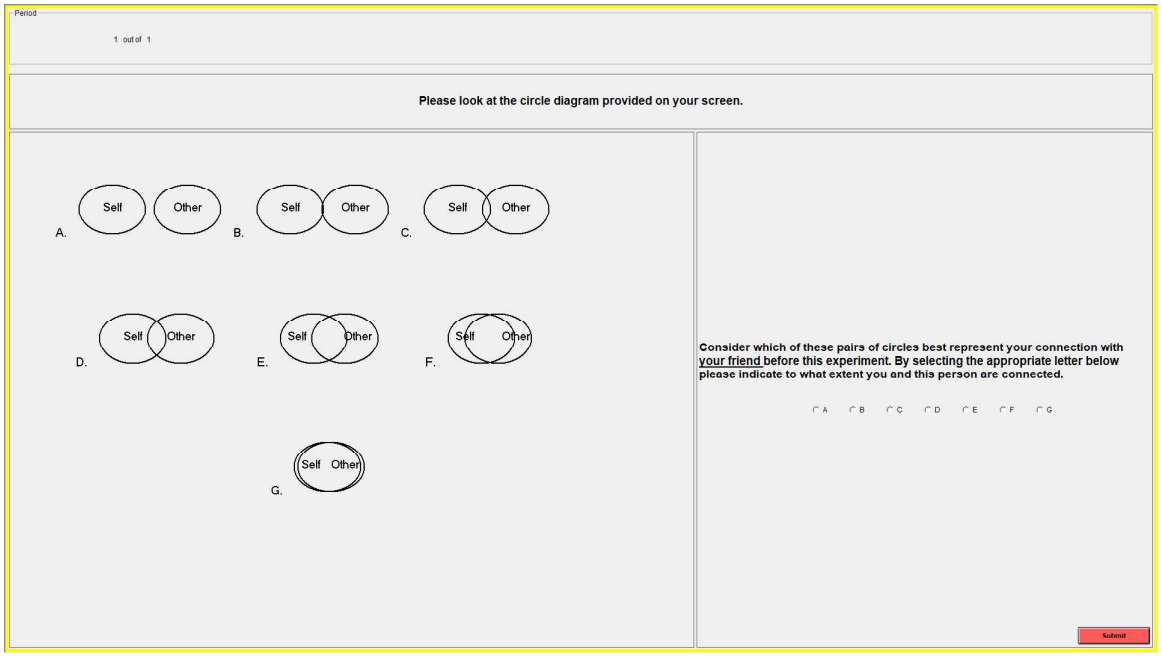
Agents Screen if they are not chosen by the principals



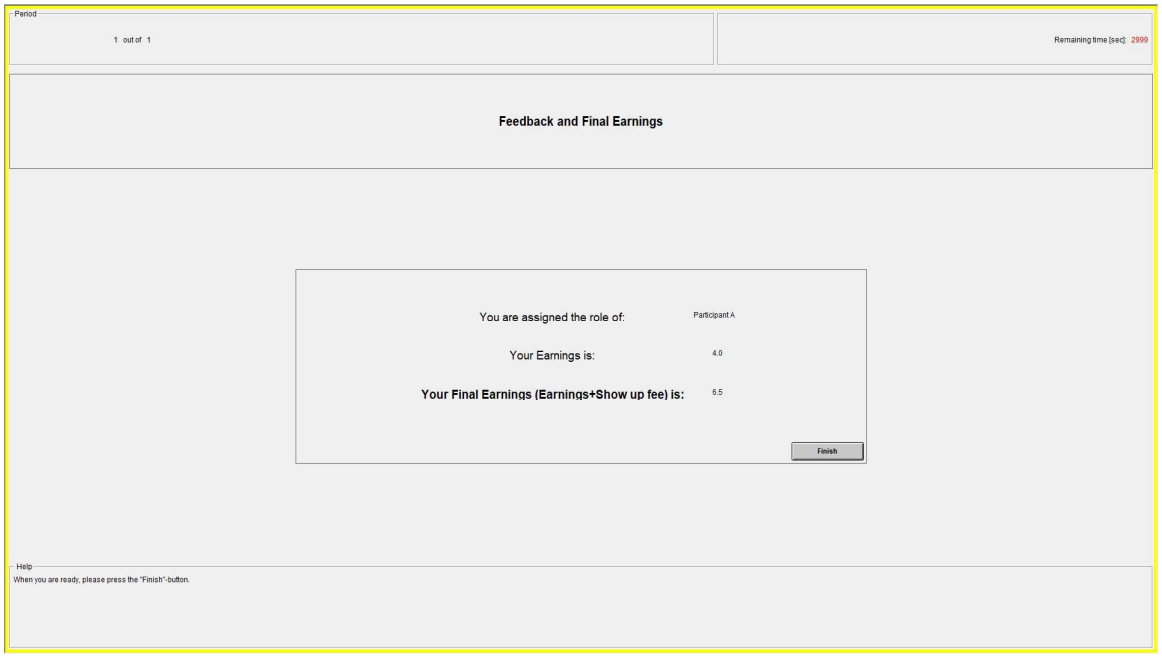
IOS for a random stranger



IOS for a Friend



Payoff


Period
1 out of 1
Remaining time [sec]: 2999
Feedback and Final Earnings
You are assigned the role of:
Participant A
Your Earnings is:
4.0
Your Final Earnings (Earnings+Show up fee) is:
6.5
Finish
Help
When you are ready, please press the "Finish"-button.

Chapter 3

Social distance and delegation: altruism or expected reciprocity?

3.1 Introduction

Recent studies on delegation suggest that a principal-agent relationship might in some cases serve a function unrelated to efficiency. For example, principals might hire agents, not because they are better or more efficient at a task, but because they just do not want to be considered responsible for the outcome. In these cases, principals hire agents to either, shift the blame for a selfish action (Bartling and Fischbacher (2012); Coffman (2011); Choy et al. (2016)) or, to avoid responsibility and punishment for the said action (Oexl and Grossman (2013); Drugov et al. (2014); Steffel et al. (2016)). Actions that principals take through agents are less pro-social than actions taken directly, hence principals hire agents to take on a self-interested action that the principals are reluctant to take on themselves (Hamman et al., 2010). In the previous chapter, we show that principals not only share more generous offers with their friends compared to strangers, but they are also less likely to delegate their decisions. If principals do delegate their decisions when they are paired with their friends, they are more likely to hire a more pro-social agent to decide on their behalf. In this chapter, we build on the findings from our previous chapter, where pro-social motives induced by variation in social distance and variation in anonymity drive principals' delegation decisions. In particular, we answer the question; which pro-social motives drive principals' delegation decisions.

Economists have identified two main mechanisms that can explain pro-social behaviour. These two mechanisms are selfless altruism which is identified through people's altruistic feelings towards others and expectation of future reciprocal favours which is identified

through variations in the anonymity of the decision maker (Leider et al., 2009). Selfless altruism is the preference for the well-being of others, and it consists of two parts, baseline altruism and directed altruism. Baseline altruism refers to people's preference for the well-being of strangers while directed altruism refers to people's preference for the well-being of their friends, family or those with closer social distance to them[1].

Reciprocity is known to significantly increase sharing (Leider et al., 2010) and it is known to significantly diminish in the presence of a moral wiggle room (Regner, 2018). Reciprocity can take the form of expectation of future favours, which refers to people's preference for the well-being of others only when they expect that it will be reciprocated in the future. In this case, a decision maker may act more pro-social towards a recipient only because she/he expects the recipient to behave more pro-social towards her/him in the future. The role of expected reciprocity is presented through removing anonymity and the increase in pro-social behaviour, driven by the information available about the decision maker (Rankin, 2006)[2]. By varying social distance and anonymity of decision makers, we focus on distinguishing between directed altruism and expectations for future reciprocal favours.

To distinguish the role of directed altruism we compare principals' decisions for their friends with principals' decisions for strangers in the anonymous treatment. Leider et al. (2010) discuss that principals share positive amounts with strangers, however, they share even more with their friends. The extra amount principals share with their friends compared to strangers is referred to as the strength of directed altruism. To observe directed altruism, we control for the anonymity of decisions. In the anonymous treatment, the recipient does not receive information about the principal. Hence, studying principals' decisions for their friends and strangers, in the anonymous, treatment will allow us to only observe decision differences motivated by directed altruism.

To observe the role of expected reciprocity, we compare principals' anonymous and non-anonymous decisions when they are paired with their friends. When decisions are anonymous it means that the recipient will not receive information about the principal. However, when decisions are non-anonymous it means that the recipient will receive information about the principal. The expectation of future reciprocal favours only makes sense if there is the possibility of future interactions. Principals will not have any

[1]If a principals' decision is motivated by baseline altruism (warm glow) then the amount share with a friend would be equal to the amount shared with strangers because they found utility in the giving itself. However, the literature on social distance suggests that this is not the case and people give more to those that are close to them (Charness and Gneezy, 2008). We refer to the motive driving the principals to care more for their friend compared to a stranger as directed altruism.

[2]There are also studies that show, less is given when anonymity is manipulated (Dufwenberg and Muren, 2006).

expectation from a stranger since they do not know that specific stranger and they will never interact with them. However, principals have expectations from their friends, family, and people they know because they have the opportunity to interact with them in the future. By studying the difference in principals' anonymous and non-anonymous decisions for their friends, we can observe if, the recipient's knowing the principal's identity will affect the principal's decision (Leider et al. (2010); Leider et al. (2009)).

For this experiment, we use a principal-agent setup where subjects take part in a modified dictator game (Forsythe et al., 1994) with a within-subject design. Subjects are randomly assigned to either the role of principal, recipient, or agent. Those in the role of principals are offered a fixed endowment and are asked to decide how much of their endowment they would like to share with the recipient. Once principals make their sharing decisions, they are given the opportunity to delegate their decision to an agent. Prior to making their delegation decisions, principals receive non-binding proposals from the agents. Principals will see the agents' proposals and their initial sharing decision and will have to decide either to share with the recipient their initial offer or hire an agent to make an offer on their behalf. The agents' proposals are non-binding, meaning that if an agent is chosen by the principal, they have the opportunity to share any amount with the recipient regardless of their proposal.

We invite participants to the lab with their friends. To manipulate the social distance between principal and recipient, we either pair principals with their friends or we pair them with a stranger in the room[3]. We also manipulate the anonymity of principals by either revealing the principals' identity to the recipient or by keeping the principals' identity hidden. Principals make anonymous and non-anonymous decisions for both their friends and a stranger. To observe the role of directed altruism we compare anonymous decisions for friends with anonymous decisions for strangers. We distinguish the role of expected reciprocity by comparing non-anonymous decisions with anonymous decisions made for friends. Principals make decisions in four different treatments in a random order. Principals make multiple decisions and only one decision is randomly selected for payment at the end of the experiment[4].

We confirm our findings from the previous chapter in which principals are more generous towards their friends and are likely to share more with them, while they are less likely

[3]A stranger in the room is not the principals' friend but someone else's friend. Our results from the previous experiment suggests that principals treat other principal's friends in the room as they would treat a stranger.

[4]Principals delegation decision is not communicated to the recipient. In the non-anonymous treatment, recipients only receive information about the principal (i.e., if they were a friend or a stranger) and the amount offered to them at the end.

to delegate their decisions to agents when they know it will affect their friends. Our findings from this chapter show that the increase in principals' generosity is driven by both principals' directed altruism for their friend and their expectation of future reciprocal favours. The decrease in principals' likelihood of delegation, is only driven by directed altruism when we control for principals' initial sharing. Principals are less likely to delegate their decisions when they are paired with their friends controlling for principals' initial offers. We do not find principals' expected reciprocity to play a significant role in determining principals' delegation decisions. Although principals' delegation decision is not determined by the expectation of future reciprocal favours, principals' choice of agent is significantly determined by this motive. When principals' anonymity is removed, they are more likely to choose a more pro-social agent than a less pro-social agent to decide on their behalf for their friend. We do not find directed altruism to play a significant role in principals' choice of agent.

Most experimental studies prefer to maintain the anonymity between subjects and to keep control over the social environment (Roth, 1995) and contain the influence of the society (Hoffman et al., 1994). If decisions are completely anonymous, they will be driven by self-interested motives (Franzen and Pointner, 2012). However, if anonymity is reduced, decisions are more pro-social and generous (Rankin, 2006). The reduction in anonymity created a closer social distance between the decision maker and the recipient. Studies on social distance suggest that people are more likely to act more pro-social when they interact with their friends compared to when they interact with strangers (Buchan et al., 2006); (Charness and Gneezy, 2008). This pro-social behaviour can be due to preference-based altruism (Andreoni, 1990), or preference over others' earnings (Bolton and Ockenfels (2000); Charness and Rabin (2002); Fehr and Schmidt (1999)). This paper builds on the rich experimental literature on social distance. We study two main pro-social motives that are induced through social distance variation in the presence of a moral wiggle room. In particular, we distinguish between the decisions motivated by altruism and decisions motivated by expectations.

To the best of our knowledge, this chapter is the first to study the role of social distance on delegation and to distinguish between directed altruism and expected reciprocity. Given that delegation is an important part of business interactions, studying the motives behind these decisions, and distinguishing between these mechanisms driving it is particularly important for policy makers. For example, delegating monitoring and other services in crowdfunded microfinance can be affected by the social ties in the society. In cultures where the social ties are either reciprocity-based or altruism-based, delegation to microfinance institutions may not be as attractive. This will help businesses identify

their social cultures and it can lead to an efficient distribution of resources and help identify areas in need of interventions. Our study helps economists identify and explain behaviour, based on the social relationship between groups and communities when a moral wiggle room is present.

The rest of the paper is organized as follows. Section 2 provides the framework and treatments of the experimental design. In Section 3 we present our hypotheses, and we summarize our empirical results on directed altruism and expected reciprocity in Section 4. In Section 5 we provide a discussion and conclusion for our results.

3.2 Experimental Design

In this section, we explain in detail our experimental design. In a principal-agent setting, we employ a series of modified dictator games using a within-subject design, to determine the role of directed altruism and expected reciprocity on principals sharing and delegation decisions.

3.2.1 Framework

There are three main roles in the experiment: the principal, the recipient, and the agents. Subjects are all randomly assigned a role. If subjects are assigned the role of principals, they are paired in a group with a recipient. Each principal is endowed with £8.00 and is asked to decide how much she/he is willing to share with the recipient in their group (in increments of £0.10). In this case, the recipient has no option but to accept the principals offer[5].

While principals decide how much to offer to the recipient, the agents are asked to state how much they would share with the recipient if they were hired by the principals to make the allocation decision. The agents' proposals are non-binding, meaning that if an agent is chosen, she/he can offer any amount to the recipient on behalf of the principals. This amount can be different or the same as their initial proposal. The non-binding proposals provide the principal with a moral wiggle room where they have the opportunity to deny having any knowledge of the agents' final allocation and hence deny any responsibility for the final allocation made to the recipient.

[5]During the experiment the recipients are asked to specify, in an incentivised setting, how much they are expecting to receive from their matched principal. If recipients guess the amount shared with them by the principals correctly, they receive £0.40. If their guess deviated by £1.00 in either direction from the allocation decision, they received an additional £0.20. They will receive no additional payment if otherwise.

Each session consists of two randomly selected agents where each agent offers a proposal to the principals. Once both agents have made their decisions, their proposals are presented to the principals along with the principals' initial offer. The principals are then asked to decide whether to send their initial allocation to the recipient or delegate the decision to one of the two agents. If the principals decide not to delegate their decision, then the amount shared with the recipient will be principals' initial offer. However, if a principal decides to delegate its decision to an agent, then the amount shared with the recipient will be the agents' final offer. This can be the same or different from the agents' initial proposal.

As previously mentioned, the principals offer to the recipient depends on the social distance $SD = \{0, 1\}$ between principals and the recipient and the anonymity of their decision $NA = \{0, 1\}$. Principals make offers to both their friends and a stranger. If Principals and recipients are friends, then $SD = 1$ and if they are strangers $SD = 0$. Principal's also make both, anonymous and non-anonymous decisions. If principals' identity (i.e., if they are friends to the recipient or strangers) is revealed to the recipient then $NA = 1$ otherwise $NA = 0$. Principals' offers to the recipients are presented in equation (3.1).

$$x_i = \alpha Z + \gamma_f SD + \gamma_n NA + \epsilon_i \tag{3.1}$$

In this equation SD represents the principals' social distance to the recipient, NA represents the level of anonymity between principal and recipient and Z is the principal's demographic information.

The agents' offers to the principals will also depend on social distance, anonymity, and demographics. Since the agents are strangers who will remain anonymous for the entire experiment, their anonymity $NA = 0$ and their social distance to the recipient is $SD = 0$. The agents' proposed offer to the recipient is presented in equation (3.2).

$$x_A = \alpha Z + \epsilon_i \tag{3.2}$$

The agent's offer depends solely on their demographic characteristics Z. Both principals and recipients do not receive any information about the agents' identity and the agents do not receive any information about the principals' and recipients' identity.

Recipients' payoff, on the other hand, is determined by the amount principals initially

share with them and the principals' decision to delegate.

$$\pi_{Ri} = (1 - Del)x_i + (Del)x_A \tag{3.3}$$

In equation (3.3) x_i is the amount principals initially offer to the recipient and x_A is the agents' final decision offered to the recipient[6]. The amount finally shared with the recipient also depends on the principal's delegation decision $Del = \{0, 1\}$. If principals decide not to delegate their decision to an agent $Del = 0$, the recipient will receive the principals' initial sharing decision for their payoff. However, if principals do decide to delegate their decision to an agent $Del = 1$, the recipient will receive the agent's final offer as their payoff.

$$\pi_{Ri} = x_i + Del(-\gamma_f SD - \gamma_n NA) \tag{3.4}$$

We replace equation (3.1) and equation (3.2) in equation (3.3). We show that the recipients' payoff is determined by principals' social distance to the recipient or their level of anonymity. If principals and recipients are strangers and their decisions are anonymous, then the recipients' payoff is the principals' initial offer to the recipient.

$$if \quad SD = 0 \quad \text{and} \quad NA = 0 \quad \Rightarrow \quad \pi_{Ri} = x_i$$

On the other hand, if the principal and the recipient are friends and their decisions are anonymous then the recipients' payoff is determined by the principals' initial sharing and principals directed altruism to the recipient.

$$if \quad SD = 1 \quad \text{and} \quad NA = 0 \quad \Rightarrow \quad \pi_{Ri} = x_i + Del(-\gamma_f)$$

If the principal and the recipient are strangers and their decisions are not anonymous, then the recipients' payoff is determined by the principals' initial sharing and principals' expected reciprocity which is induced by anonymity to the recipient.

$$if \quad SD = 0 \quad \text{and} \quad NA = 1 \quad \Rightarrow \quad \pi_{Ri} = x_i + Del(-\gamma_n)$$

However, if principals and recipients are friends and their decisions are not anonymous, then the recipients' payoff is determined by principals' initial sharing, principals' directed

[6]As mentioned by Hamman et al. (2010) agents have little incentive to deceive principals. Hence, we assume there is no difference between agent proposals and their final offers to the principal.

altruism to the recipient and their expected reciprocity. In this case:

$$if \quad SD = 1 \quad \text{and} \quad NA = 1 \quad \Rightarrow \quad \pi_{Ri} = x_i + Del(-\gamma_f - \gamma_n)$$

Principals' payoffs are principals' initial endowment minus recipients' payoff from the game.

$$\pi_{Pi} = w - \pi_{Ri} \tag{3.5}$$

Although principals' and the recipients' earnings depend on the amount shared with the recipient, the agents' earnings are independent of principals' offers. The agents' earnings are calculated depending on the number of principals that choose an agent[7]. The agents receive a fixed income of £4.40 and they can earn more depending on the number of principals who decide to choose them. Agents' earnings are based on the following payoff function:

$$\pi_{Ai} = 4.4 + 0.30 n_{Pi} \tag{3.6}$$

In equation (3.6) n_{Pi} represents the number of principals that delegated their decision to a specific agent. This function generates a setting where agents start with an initial capital of £4.40 and marginal revenue of 0.30. One main advantage of this payoff function is that it avoids directly rewarding agents for maximizing principals' payoff. This also suggests that to increase their earnings, the agents must have more than two principals hire them. The agents break even when only two principals decide to hire them.

3.2.2 Treatment

To capture the main explanations for principals' pro-social behaviour, we consider treatment variation along two dimensions: variation in the social distance and variation in anonymity of decisions. Variation in the social distance reveals the role of directed altruism and variation in anonymity reveals the expectation of future reciprocal favours.

[7]In their paper, Hamman et al. (2010) structure the agents' payoff with a £5.00 starting capital and the payoff function of $\pi_{Ai} = 0.6 + 0.30 n_{Pi}$. With their payoff function agents receive or lose additional payment in each round based on how many principals choose them. This payoff function creates a set-up in which agents face a fixed cost of providing service of £0.60, zero marginal cost, and a constant marginal revenue of £0.30. Since our experiment is a one-shot game for each scenario the subject's fixed cost is subtracted from the agent's initial capital. Hence, the agents receive a fixed income of £4.4 and they can earn more depending on the number of principals who decide to choose them.

We invite subjects to the lab with their friends and ask them to make allocation and delegation decisions for both their friend and a random stranger in the room. The friend principals bring to the lab has to be someone they know (friend, housemate, classmate,...). When arriving at the lab, each participant and their friend are assigned either the role of principal or recipient[8]. By studying social distance variation, we reveal to the principal if they are paired with their friend or a stranger, but we do not reveal this information to the recipient. Keeping the principal anonymous will allow the principal's decisions to be only motivated by directed altruism. We use variation in social distance to understand the role directed altruism plays in principals' decisions.

During the experiment, principals make allocation and delegation decisions for both their friend and a stranger anonymously and non-anonymously. By varying anonymity, we vary how much information is revealed to the recipients regarding the principal at the end of the experiment. If the principal's decisions are anonymous, recipients do not receive information regarding the principal (i.e., they would not know if the principal is their friend or a stranger). However, if the principal's decisions are non-anonymous, the recipients do receive information about the principals' role and if she/he was their friend or a stranger. We use variation in anonymity to understand the role expected reciprocity plays in principals' decisions.

Principals make anonymous and non-anonymous decisions for both their friends and a stranger. The principal is anonymous to the recipient if the recipient does not receive relevant information about the principal. This means that the recipient does not know if the principal is their friend or a stranger. When principals are paired with a stranger and the principal is anonymous to the recipient, they are making decisions in the Stranger-Anonymous (SA) treatment. On the other hand, when principals are paired with their friends and the principal is anonymous to the recipient, they are making decisions in the Friends-Anonymous (FA) treatment. Depending on the principals' paired partner, if one of these treatments is randomly selected for payment, then the recipient will not be informed that the principal making this decision was their friend or a stranger to them.

When principals are non-anonymous to the recipient it means that the recipient does know if the principal is their friend or a stranger. The principal is not anonymous to the recipient if the recipient receives relevant information about the principal. If principals are paired with a stranger and the principal is not anonymous to the recipient, they are making decisions in the Stranger-Non-Anonymous (SNA) treatment. On the other hand, when principals are paired with their friends and the principal, is not anonymous to the

[8]One pair will randomly be assigned the role of agents. All roles remain constant throughout the experiment.

recipient, they are making decisions in the Friends-Non-Anonymous (FNA) treatment. If one of these non-anonymous treatments is randomly selected for payment, the recipient will be informed that the principal making this decision was a stranger or their friend.

Principals make decisions in four treatments and one decision is randomly selected for payment at the end of the experiment. At the end of the experiment, subjects are asked to respond to a short questionnaire. Once all subjects have submitted their responses they will be paid in private and in cash.

3.2.3 Measuring Closeness

After the main experiment, we also check the robustness of our treatment manipulation. As mentioned, we vary the social distance between participants by asking them to bring a friend with them to the lab. To make sure that this social distance manipulation is effective we ask participants to state how close they feel to the recipient. To do so, we use a handy measurement technique introduced by (Aron et al., 1992) known as the Inclusion of the Other in Self (IOS) scale. This scale is highly intuitive, it is simple and easy to implement and it is able to track important dimensions of a relationship closeness (Gachter et al., 2017). Hence it is a perfect tool for summarizing bilateral relationships.

Figure 3.1 presents an image of the IOS scale. The Inclusion of the Others in Self or IOS scale is measured with 7 different overlapping circles. One circle represents the participant themselves and the other represents their paired participant. The more participants are connected, the more overlapped these circles. Participants are asked to state which of these circles best represents their closeness with their paired partner. If participants feel close to their partner, then we expect them to select more overlapped circles. On the other hand, if participants are paired with strangers, we expect them to select the more distanced circles. We use this tool and replicate the IOS scale measurement that we use in Chapter two. We ask participants to state their level of closeness to their paired partner.

To complement our results, we also follow Cialdini et al. (1997) measure of closeness. Presented in Figure 3.2, Cialdini et al. (1997) introduce a measurement scale known as the WE scale which they use to understand how close subjects felt towards their friends. They ask participants to state, to what extent before the experiment would they have used the term, WE to characterize you and your friend. This is a 7-point scale where 1 means the participants did not refer to themselves and their friend as we and 7 means the participants used the term we very much to characterise themselves and their friend. If participants feel close to their friends, we expect them to choose a higher amount on

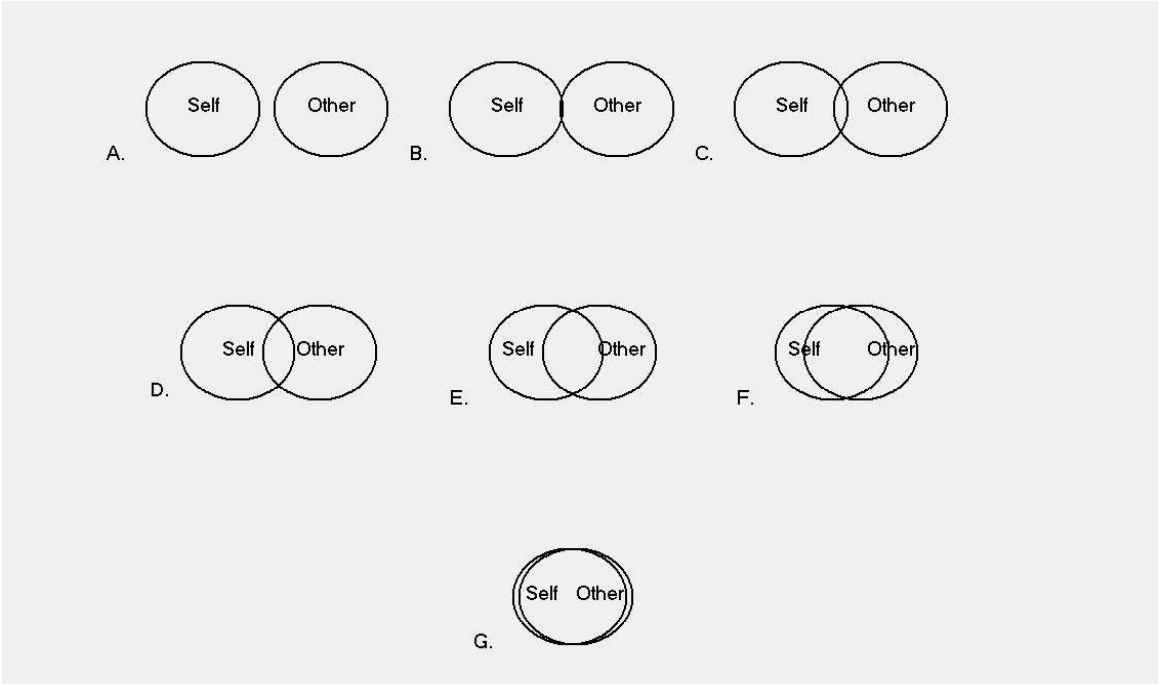


Figure 3.1: IOS scale measures

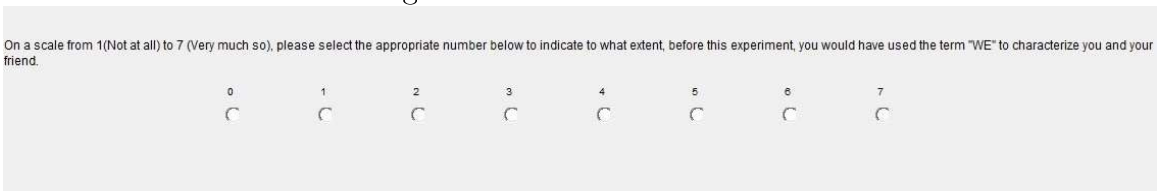


Figure 3.2: WE scale measures

the WE scale. Using both the IOS scale and the WE scale we define a slightly better measure known as the Oneness scale.

The oneness scale is the average of the IOS scale and the WE scale which provides the sense of interconnection and merge among participants. This scale is confirmed to be slightly better compared to the IOS scale alone (Gachter et al. (2015); Gachter et al. (2017)), hence we add the WE scale to have a better understanding of the connection between principals and their friends.

3.3 Hypotheses

In this section, we study the role of social distance on delegation decisions by exploring two main motives: directed altruism and expectation of future reciprocal favours. These motives provide an explanation for principals sharing decisions when social distance varies (Leider et al. (2010); Leider et al. (2009)). We investigate whether these motives

can also explain why principals delegate less when interacting with a friend than a stranger.

We first look at the role of directed altruism on principals' delegation decisions. Principals' altruistic behaviour consists of two parts: baseline altruism which refers to how altruistic an individual is towards a random stranger and the directed altruism which refers to how altruistic an individual is towards their friends. This categorisation of altruistic behaviour suggests that, if principals share more with their friends compared to a stranger, the increase in sharing is due to directed altruism.

In the second chapter, we discussed principals' sharing and delegation decisions. We showed that principals share more with their friends compared to a stranger. This is in line with (Hoffman et al. (1996); Bohnet and Frey (1999); Charness and Gneezy (2008)), suggesting that principals are more generous with those who have a closer social distance to them. In their study, Leider et al. (2010) show that there are two pro-social motives. One of these motives is directed altruism which drives the increase in generosity between two friends. Here we follow their structure and separate the role of directed altruism driving principals sharing decisions when the social distance between principal and recipient varies. To avoid including other motives in our treatment we focus on principals' anonymous decisions for their friends and their anonymous decisions for a strangers. This will allow us to present our first Hypotheses.

- **Hypothesis 1.** If directed altruism drives principals sharing decisions, then we expect to see an increase in principals sharing when principals are paired with their friends in the anonymous treatment. We expect principals to offer more to the recipient in the Friends-Anonymous (FA) treatment compared to the Stranger-Anonymous (SA) treatment.

Our findings from the first chapter also show that if a principal is paired with their friend, they are less likely to delegate their decision to an agent. Our results also show that conditional on delegation principals are more likely to delegate their decision to a pro-social agent when principals are paired with their friends. This suggests that not only principal's delegation decision is driven by pro-social motives but so is principals' choice of agent. Evidence on delegation decisions suggests that principals delegate their decision to hide behind an agent and exploit the moral wiggle room. If a principal does delegate, they hire a less prosocial agent to make a decision on their behalf (Dana et al. (2007); Coffman (2011); Bartling and Fischbacher (2012); Hamman et al. (2010)). Based on this evidence, we expect less delegation, and conditional on delegation a more pro-social agent chosen by the principals, when the recipient is their friend.

Although in the first chapter we observe how variation in social distance affects delegation decisions we do not know what pro-social motive is driving this decision. Here, we hypothesise that the decrease in principals' delegation decision is driven by directed altruism (Leider et al., 2010). To ensure that the effect we observe is solely driven by directed altruism we study decisions in an anonymous setting. Anonymity will help us avoid the role of any other motives in play and single out the role of directed altruism. We highlight directed altruism as an important driver for principals' sharing decisions and their delegation decisions when social distance is minimised.

- **Hypothesis 2.** If directed altruism drives principals' delegation decisions, then we expect the likelihood of delegation to be lower when principals are paired with their friends in the anonymous treatment. We expect principals to delegate their decisions less to an agent in the Friends-Anonymous (FA) treatment compared to the Stranger-Anonymous (SA) treatment.

- **Hypothesis 3.** Conditional on delegation, we expect principals to hire more pro-social agents when they are paired with their friends, if directed altruism drives principals' choice of agent. We expect principals to hire a more pro-social agent in the Friends-Anonymous (FA) treatment compared to the Stranger-Anonymous (SA) treatment.

Previous studies suggest that principals share more with recipients when decisions are not anonymous compared to when they are anonymous (Hoffman et al. (1994); Frohlich et al. (2001); Franzen and Pointner (2012)). A principal will make higher offers to the recipient if they know that their decisions will be observed. To understand the role that observability of decision plays in determining principals' decisions we now compare principals' anonymous and non-anonymous decisions when they are paired with their friends. We vary how much information is revealed to the recipients regarding the principal at the end of the experiment. In the anonymous treatment, we do not share any information about the principal with the recipient. In other words, the recipients do not know if their paired principal was their friend or a stranger. However, in the non-anonymous treatment, the recipient is informed of the selected decision for payment. We refer to the motives induced by removing anonymity as expected reciprocity or expectation of future reciprocal favours. For reciprocal favours to take effect, there needs to be a known social tie between the principals and the recipient[9]. In their paper, Leider et al. (2009) shows that principals' decisions can be influenced by the

[9]If principals and recipients are strangers, the likelihood of reciprocation will be very low.

expectation of future reciprocal favours. They show that principals are more generous to their friends when their identity is revealed. If revealing principals' identity induces pro-social behaviour, we expect to see an increase in principals' offers and a decrease in principals' delegations decision when principals are paired with their friends. Based on this we structure our hypotheses.

- **Hypothesis 4.** If expected reciprocity drives principals' sharing decisions, then we expect to see an increase in the principals sharing when their identity is revealed to their friends. Principals will offer more to their friends in the Fiends-non-anonymous (FNA) treatment compared to the Fiends-anonymous (FA) treatment.

Our finding from the first chapter showed that in a close social distance when there is variation in anonymity, principals are less likely to delegate. Leider et al. (2010) suggest that one motive that can drive this decision is expected reciprocity which is induced by variation in anonymity. If principals believe that in the future, the recipient may reciprocate, relative to their decisions, they may change the decision they make for the recipient when decisions are observed compared to when they are not observed. Studies on reciprocity and delegation decisions suggest that the moral wiggle room has no significant effect on reciprocal behaviours (van der Weele et al., 2014). However, in their paper Regner (2018) shows that reciprocity diminishes in the presence of a moral wiggle room. They suggest that reciprocation may be an obligation and providing a moral wiggle room will remove this feeling. We test whether inducing expected reciprocity would drive the decrease in principals' delegation decisions. We also study principals' choice of agent when decisions are anonymous and when they are not anonymous. We expect principals to delegate less and to choose a more pro-social agent when their decisions can be observed by the recipient. We expect this to be driven by the expectation of future reciprocal favours.

- **Hypothesis 5.** If expected reciprocity drives principals' delegation decisions, then we expect to see a decrease in delegation when principals identity is revealed to their friends. Principals are less likely to delegate their decisions to an agent in the Fiends-non-anonymous (FNA) treatment compared to the Fiends-anonymous (FA) treatment.

- **Hypothesis 6.** If expected reciprocity drives principals' choice of agent, then we expect principals to hire a more pro-social agent when their identity is revealed to their friends. Principals hire a more pro-social agent in the Fiends-non-anonymous (FNA) treatment compared to the Fiends-anonymous (FA) treatment.

3.3.1 Procedure

The experiment was conducted at the University of Birmingham in December 2019, using SONA recruitment system[10]. The programming was done with z-Tree software (Fischbacher, 2007). The experiment consists of 11 sessions with a total of 176 subjects. At the end of the experiment, each subject was paid based on the decisions they made in their assigned role. Average earnings (including £2.50 show-up fee) for the principals were £8.21, for the recipients were £5.30, and for the agents were £7.34. Before the experiment began, participants received the instructions reproduced in Appendix A.

3.4 Results

In this section, we discuss the results of our experiment. First, we provide a summary statistic of both principal and agent decisions. We then investigate principals' sharing decisions, principals' delegation decisions and their choice of agent in the presence of pro-social motives. Our focus is specifically on directed altruism and expected reciprocity as the two main motives driving principals' decisions. We provide a detailed analysis on the role of directed altruism and its effect on principals' decisions. We also explore the role of expected reciprocity on principals' decisions. We conclude by exploring other motives that may drive principals' delegation decisions.

3.4.1 Closeness

We first assess our exogenous social distance manipulation. We report scores from three closeness measurement scales in Figure 3.3. We first report results from the IOS scale recorded on a 7-point scale, where 1 represents participants feeling distant from each other and 7 represents participants feeling close toward each other. During the experiment we ask subjects to state how close they felt towards their friend whom they came to the lab with and a random stranger in the room.

Using a Wilcoxon matched-pairs signed-rank, we test the equality of matched pairs of observations and compare principals' closeness to their friends and the stranger in each scale. We find a significant difference between subjects' closeness level to their friend compared to their closeness level to a stranger (5.44 vs. 1.97; Wilcoxon matched-pairs signed-rank test: $p < 0.01$). On average, subjects ranked their closeness to their friends

[10] `https://bham-beadslab.sona-systems.com/`

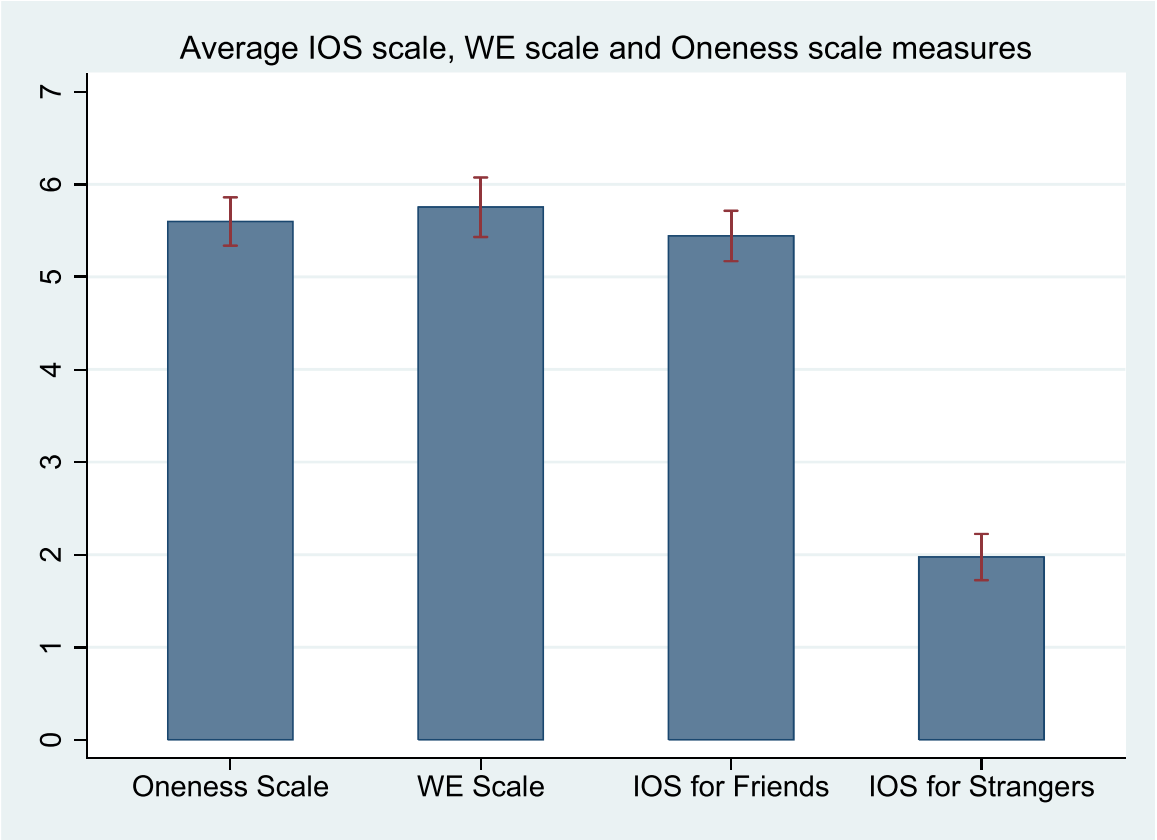


Figure 3.3: Average IOS scale, WE scale and Oneness scale measures

as 5.44 and their level of closeness towards a stranger as 1.97. Subjects felt close towards their friends and distant towards a stranger.

Looking at the results from the WE scale and the oneness scale confirms our findings from the IOS scale. On average, the subjects' WE scale is 5.75 and their oneness scale result is 5.60. We do not find a huge difference between principals' Oneness scale results and their WE scale results (5.60 vs. 5.75; Wilcoxon matched-pairs signed rank test: $p < 0.05$). We also find a significant difference between principals' reported IOS scale results for a stranger and their Oneness scale result (5.60 vs. 1.97; Wilcoxon matched-pairs signed-rank test: $p < 0.01$). Our results confirm that our manipulation of social distance variation has been successful, and principals do feel closer towards their friends compared to strangers.

3.4.2 Summary Statistics

Principals Sharing decision

Looking at Figure 3.4 we can see a significant difference between principals sharing when they are paired with strangers compared to when they are paired with their friends. In the SA treatment, we see that 28.57% of principals share nothing with the strangers, while over 20.00% of them share at least half of their endowment with the recipient. This pattern is also observed in the SNA treatment where 22.00% of the principals share zero with the strangers and 25.00% of them share half of their endowment. When paired with their friends in the FA treatment, 45.00% of the principals share half of their endowment with the recipient while only 13.00% of them share nothing. Looking at the FNA treatment, we see that 57.14% of the principals share half of their endowment and only 5.19% of them share nothing with their friends.

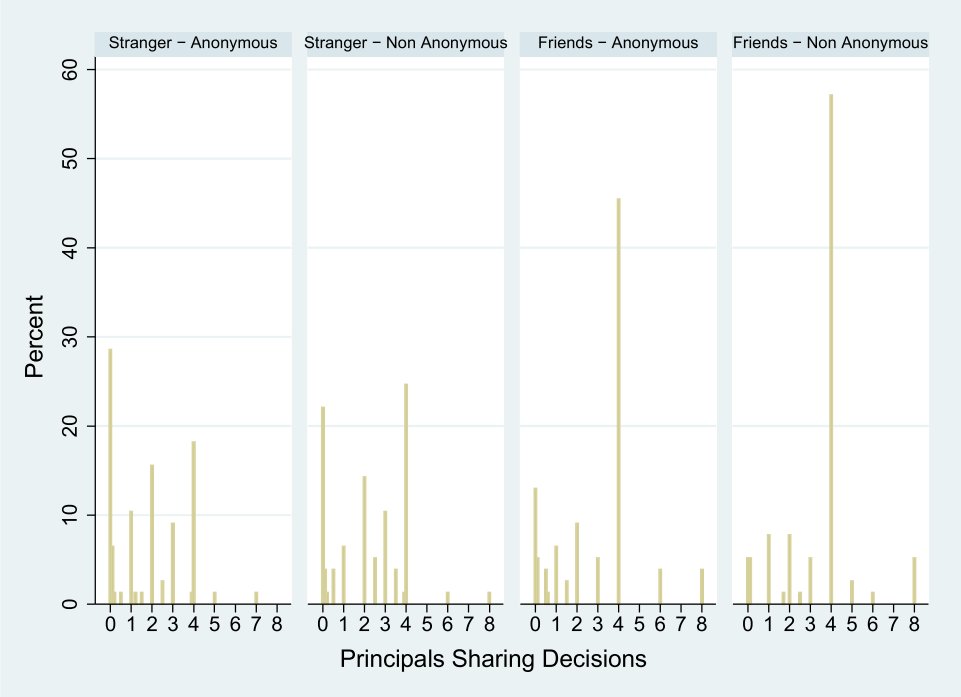


Figure 3.4: Distribution of principals sharing decisions, by treatment

Table 3.1 presents the principals' average sharing with the recipient in each treatment. In the SA treatment, principals share £1.74 with a stranger while in the FA treatment they share £2.84 with their friends. When decisions are non-anonymous, principals share an average of £2.17 with strangers in the SNA treatment and an average of £3.36 with their friends in the FNA treatment. On average, principals share more with their friends compared to strangers. We also observe more generous offers from principals

when decisions are non-anonymous, and principals are paired with their friends. This generosity may be induced due to directed altruism or due to expectations of future reciprocal favours. To distinguish between these motives, we compare decisions made for friends with decisions made for strangers in the anonymous treatment (SA vs. FA) and observe the role of directed altruism. We also compare anonymous decisions with non-anonymous decisions when principals are paired with their friends (FA vs. FNA) to observe the role of expected reciprocity.

Table 3.1: Average principals sharing decisions in each treatment.

	Mean	Obs.
Stranger - Anonymous (SA)	1.74	77
	(1.69)	
Stranger - Non Anonymous (SNA)	2.17	77
	(1.77)	
Friends - Anonymous (FA)	2.84	77
	(2.03)	
Friends - Non Anonymous (FNA)	3.36	77
	(1.82)	

Notes: The standard deviations are reported in parentheses.

Using a Wilcoxon matched-pairs signed rank, we test the equality of matched pairs of observations and compare principals' average sharing across treatment. By comparing FA treatment with SA treatment, we show that, when decisions are anonymous, principals share significantly more with their friends compared to strangers and this is driven by directed altruism (1.74 vs. 2.84, Wilcoxon matched-pairs signed rank test: $p < 0.01$). We also compare principals' anonymous and non-anonymous decisions when they are paired with their friends. Principals share significantly more with their friends in the FNA treatment compared to the FA treatment (3.36 vs. 2.84, Wilcoxon matched-pairs signed rank test: $p < 0.01$)[11]. This suggests that expected reciprocity driven by non-anonymity of decisions can significantly increase principals' sharing with their friends[12].

[11]Our results are not a consequence of small sample size, indicated by ex-ante and ex-post power analyses. With this sample size, we have 80% power to detect effect size on the 5% significance level.

[12]We observe a statistically significant difference in principals' sharing when we compare principals decisions in the SA treatment with SNA treatment (1.74 vs. 2.17, Wilcoxon matched-pairs signed rank test: $p < 0.01$). We also observe a statistically significant difference in principals sharing when we compare FNA treatment to SNA treatment in the non-anonymous (2.17 vs. 3.36, Wilcoxon matched-pairs signed rank test: $p < 0.01$).

Principals Delegation Decision

Our findings from the previous section suggest that principals share more with their friends compared to strangers and that they offer their friends more when their anonymity is removed. In this part, we look at principals' delegation decisions and how they vary with social distance and anonymity. Figure 3.5 presents the number of principals who decided to delegate their decisions to an agent in each treatment. In general, we observe that principals are less likely to delegate when they are paired with their friends. In the SA treatment, around 39% of the principals delegate their decisions to an agent. In the SNA treatment, 45.45% of the principals delegated their decision to an agent. We do not find a significant difference between the number of principals delegated in SA treatment and SNA treatment (Wilcoxon matched-pairs signed rank test: $p = 0.2513$).

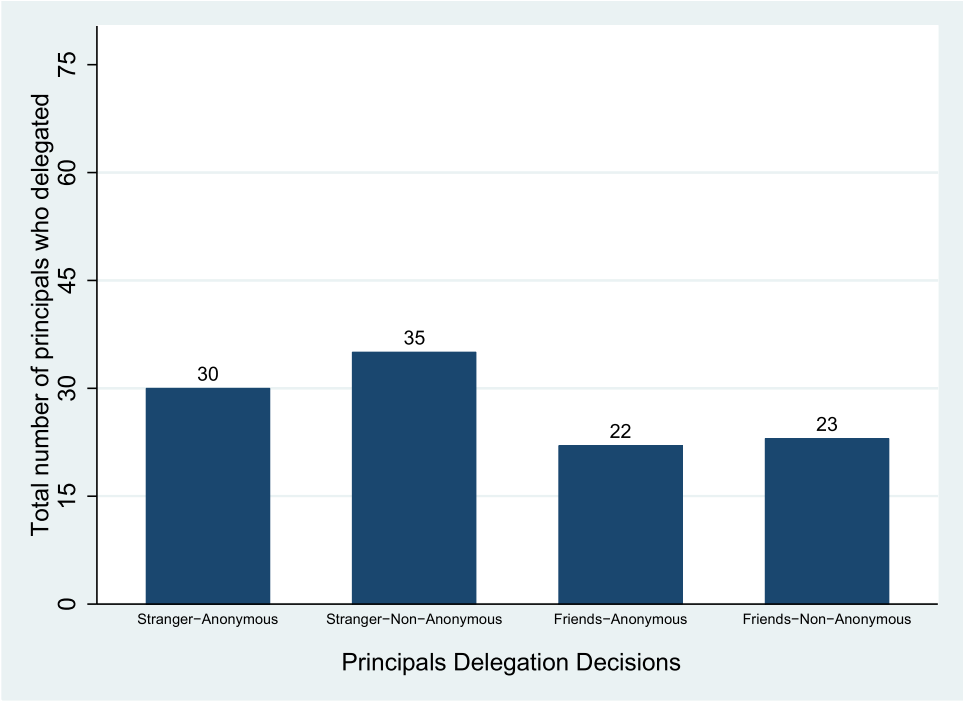


Figure 3.5: Principals Delegation decision, by treatment

When principals are paired with their friends the likelihood of delegation decreases. In the FA treatment, only 28.57% of the principals delegate their decision to an agent. We also do not find a significant difference between principals' delegation in the FA treatment with principals' delegation in the SA treatment (Wilcoxon matched-pairs signed-rank test: $p = 0.1824$). In the FNA treatment, 29.87% of the principals delegate their decisions to an agent. When principals are paired with their friends and they are no longer anonymous, they behave more pro-social, and they are also less likely to

hire agents to take on their decisions. We find no significant difference between principals delegation in the FNA treatment with principals delegation in the FA (Wilcoxon matched-pairs signed-rank test: $p = 0.8348$)[13]

In general, we find that principals are less likely to delegate their decisions when their recipient is a friend. We find that principals hire agents who offer less pro-social proposals when they decide to delegate. This increase in principals' offers, and decrease in delegation decisions may be due to conditional and unconditional motives that can induce pro-social behaviour (Leider et al., 2010). We specifically examine the role of directed altruism and expectations of future reciprocal favours.

We now provide a detailed analysis to see which driving factor can explain the increase in principals sharing and delegation decision: directed altruism driven by variation in social distance or expected reciprocity, driven by variations in anonymity.

3.4.3 Directed altruism

As mentioned, directed altruism is people's preference for the well-being of their friends or those with closer social distance to them. In this section, we analyse principals directed altruism when social distance varies. We study principals' anonymous decisions in the FA treatment and the SA treatment. This will allow us to have a better understanding of directed altruism when the social distance between principal and recipient varies.

Principals Sharing decision

Our results from the previous section show that principals share more with their friends compared to strangers. In this section, we explore if this increase in sharing is driven by directed altruism induced by the closer social distance between principals and recipients. Using data from the anonymous treatment, we analyse how variation in social distance can induce altruistic preferences and affect principals' sharing decisions.

Table 3.2 reports the results from three models, where the dependent variable is the amount principals share with their matched recipient. Given that principals' sharing

[13]We also perform an equality of proportions test where we find a significant difference between the percentage of principals who delegated in the SNA treatment compared to the FNA treatment (Two-sample test of proportions: $p < 0.05$). We do not find a significant difference in the percentage of principals who delegated their decision to an agent between other treatments.

decisions are bounded below and above by £0.00 and £8.00, we use a Tobit regression[14]. We exploit the fact that we observe multiple decisions from each principal in the anonymous treatment and we control for the social distance between principals and recipients by including a dummy variable Friend to the regression. If principals are paired with their friends as the recipient, this variable takes the value 1 and 0 otherwise. We use this variable to identify the strength of directed altruism. The estimated coefficient on the variable Friend is interpreted as directed altruism or the extra amount principals share with their friends compared to strangers.

Table 3.2: Principals sharing decisions in the anonymous treatment when social distance varies - regression results.

Dependent variable: Principals Sharing Decisions	Model(1)	Model(2)	Model(3)
Friend	1.392****	1.387****	1.387****
	(0.269)	(0.270)	(0.270)
Female			0.216
			(0.544)
Order of Treatments	No	Yes	Yes
Constant	1.330****	1.628	1.438
	(0.284)	(1.453)	(1.473)
sigma			
Constant	2.300****	2.267****	2.267****
	(0.196)	(0.192)	(0.193)
N	154	154	154

Notes: Tobit estimates. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Friend is a dummy variable that takes on the value 1 if principals are paired with their friends and 0 if they are paired with strangers. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

We first analyse the pure effect of variation in social distance. In Model (1) we only include the dummy variable indicating principals' social distance to the recipient. We observe that if the recipient is a friend, principals share more generous offers with them. We claim that this increase in generosity is driven by principals' directed altruism for their friends. Our regression analysis provides support in favour of Hypothesis 1. In Model (2) we include the Friends dummy variable while controlling for the order in which principals made their decisions in each treatment. Since this is an experiment

[14]Since we observe multiple decisions for each principal in the anonymous treatment we control for unobserved heterogeneity in the principals' decisions by including random effects. Our results from the random effect are very similar to the Tobit estimate that we have included in the paper.

with a within-subject design, principals make decisions in four different scenarios. To avoid order effects, we randomize the order in which the principals see each scenario and we include the order for them in the regression. This will clarify if the order in which principals made their decisions had any significant effect on principals' sharing decisions. Our results from Model (2) confirm the robustness of the results from Model (1). In Model (3) we also control for principals' gender. These results imply that directed altruism driven by variations in the social distance can significantly drive the increase in principals sharing when decisions are anonymous. Principals' generosity towards a recipient is predicted by the social distance between principals and recipients and principals' generosity towards a stranger. We vary the social distance between principal and recipient and compare principals' generosity towards a friend with generosity towards a stranger. Any change in generosity is considered as directed altruism driving principals' decisions. These results show that a one unit increase in generosity towards a stranger is associated with a 1.39 unit increase in generosity towards a friend. Meaning that pairing principals with their friends can induce altruism and lead to a £1.39 increase in principals' offers to their friends. This result is in line with the findings from Leider et al. (2009) and highlights the clear role of directed altruism on principals' sharing decisions.

- **Result 1:** When paired with their friends, directed altruism drives the increase in principals' generosity.

Principals Delegation decision

We further explore whether the decrease in principals' delegation decisions, is driven by directed altruism, when they are paired with their friends. We focus on principals' delegation decisions in the anonymous treatment while varying the social distance between principals and recipients. Given that closer social distance induces altruistic preferences, we minimise the social distance between principals and recipients to see if there is a change in principals' decision to delegate. If principals' delegation decisions are significantly different we can claim that directed altruism drives principals' decision to delegate.

We use a Probit regression with marginal effects, where principals' delegation decision is our dependent variable and it takes the value 1 if principals delegated their decisions to an agent and 0 otherwise. As a dependent variable, we include the dummy variable Friend to our model. This is used to control for the role of social distance, and it takes the value 1 if principals are paired with their friends and 0 if they are paired with

Table 3.3: Principals' delegation decisions in the anonymous treatment when social distance varies - Marginal Effects.

Dependent variable: Principals Delegation Decisions	Model(1)	Model(2)	Model(3)
Friend	-0.103	-0.194**	-0.195***
	(0.0762)	(0.0758)	(0.0752)
Principals Sharing decision		0.0783****	0.0797****
		(0.0159)	(0.0164)
Female			-0.0267
			(0.0735)
Order of Treatments	No	No	Yes
N	154	154	154

Notes: This table presents Probit regression results with marginal effects reported in percentage points. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Friend is a dummy variable that takes on the value 1 if principals are paired with their friends and 0 if they are paired with strangers. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

a stranger. The estimated coefficient on the dummy variable Friend is interpreted as the likelihood of delegation if directed altruism is induced. We control for principals' sharing decisions by including the principals' initial sharing to the regression. Using this regression, we can confirm if principals' delegation decisions are driven by directed altruism when social distance is minimised.

Table 3.3 reports the result of three models[15]. In Model (1) we include only the dummy variable Friends. In this case, we see that being paired with friends decreases delegation by 10 percentage points but this is not statistically significant. In Model (2) of the regression we not only include the Friend dummy variable, but we also control for principals' initial sharing decisions. Principals decide on their delegation given the initial amount they decide to share with the recipient. Including principals sharing decisions will allow us to observe principals' delegation decisions for a given amount shared with the recipient. We confirm that, for a given offer, principals are less likely to delegate when they are paired with their friends. The results from this model suggest that being paired with friends significantly decreases the likelihood of delegation by 19 percentage points. The results from Model (3) suggest that our findings from Model (2) are

[15]We replicate our results from the first chapter where we look at principals' delegation decisions when the social distance between principals and recipients and their anonymity are removed. In this case, both altruism and expected reciprocity are in play. Our results are in line with our findings in the first chapter. We find that observability of decisions by the recipient can decrease principals' delegation to agents when principals are paired with their friends as the recipient. This result is presented in Appendix B.1.

robust when we control for gender and the order in which principals responded to the treatments.

These results suggest that the decrease in principals delegation decisions is driven by directed altruism induced through a decrease in social distance when we control for principals' sharing decisions[16]

- **Result 2:** When paired with their friends, directed altruism drives the decrease in principals' likelihood of delegation ceteris paribus.

Principals' Choice of Agent

We now examine if principals directed altruism drives their choice of agent. We previously showed that, when controlling for shared decisions, principals' delegation decision is driven by directed altruism. Here we want to know if directed altruism also drives the type of agent that is chosen by the principals. Motivated by directed altruism, are principals hiring a more pro-social agent when they delegate?

Using a probit regression with marginal effects we study if directed altruism, induced by variation in social distance, drives principals' choice of agent. To do this we introduce our dependent variable as the principals' delegation to a pro-social agent. If principals do delegate to a pro-social agent, the dependent variable will take the value 1 and if they delegate to a selfish agent it takes the value 0. We include the dummy variable Friend in the regression to observe the role of directed altruism driven by variation in social distance. The variable Friend takes the value 1 if principals are paired with their friends and it takes the value 0 if they are paired with a stranger. Given that principals' delegation decision is significantly determined by principals sharing decisions, we also include principals sharing decisions to our model. In the end, we also control for principals' gender and the order in which principals took part in the treatments.

Our results from this regression are presented in Table 3.4. In Model (1) we look at the sole effect of directed altruism. We include the Friend dummy variable and we do not observe a significant coefficient. Results from this model suggest that the principal's choice of agent is not significantly determined by directed altruism induced through variation in social distance. In Model (2) we control for principals sharing decisions while including Friend dummy variables in the model. We do not find a significant

[16]To check for the robustness of our results we also run a regression where we control for both selfish and pro-social agents' non-binding proposals while taking into consideration principals' social distance to their paired recipient. The result of this regression is presented in Appendix.B.2.

Table 3.4: Principals' delegation to a pro-social agent in the anonymous treatment when social distance varies - Marginal Effects.

Dependent variable: Principals delegation to a pro-social agent	Model(1)	Model(2)	Model(3)
Friend	0.187	0.0812	0.0710
	(0.126)	(0.138)	(0.135)
Principals Sharing decision		0.0696*	0.0739**
		(0.0362)	(0.0308)
Female			0.140
			(0.124)
Order of Treatments	No	No	Yes
N	52	52	52

Notes: This table presents Probit regression results with marginal effects reported in percentage points. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Friend is a dummy variable that takes on the value 1 if principals are paired with their friends and 0 if they are paired with strangers. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

coefficient even when controlling for principals sharing decisions. These results suggest that principals' choice of agent is not determined by directed altruism, meaning that the principal's likelihood of choosing a pro-social agent is not determined by principals' social distance to the recipient. Our results are robust when we also control for principals' gender and the order in which principals made their decisions[17].

- **Result 3:** Conditional on delegation, principals' choice of pro-social agent is not driven by directed altruism.

3.4.4 Expected reciprocity

We now examine principals' decisions when they interact with their friends non-anonymously. By using principals' anonymous decisions when they are paired with their friends and comparing them to their non-anonymous decisions when they are paired with their friends we can distinguish the role of expected reciprocity. By studying principals' de-

[17]By computing Bonferroni's adjusted p-values for hypothesis 1 (p-value=0.0004), hypothesis 2 (p-value=0.1750) and hypothesis 3 (p-value=0.1802) we further strengthen our findings.

cisions in the FA treatment and comparing them with their decisions in the FNA treatment we can observe if expected reciprocity plays a role in driving principals' pro-social decision.

Principals Sharing decision

We now examine if principals sharing decisions are driven by their expectations of any future reciprocal favours. If principals know that their decisions are observed by their friends, they might behave more pro-social since they expect their friends to reciprocate their actions in the future. We use principals sharing decisions for their friends as the dependent variable and as the independent variable, we include the dummy variable Non-Anonymous. The non-anonymous variable takes the value of 1 if principals decide in a non-anonymous condition and 0 otherwise.

Table 3.5: Principals sharing decisions for their friends when anonymity between the principal and the recipient varies - regression results.

Dependent variable:Principals Sharing Decisions	Model(1)	Model(2)	Model(3)
Non-Anonymous	0.620****	0.618****	0.615****
	(0.175)	(0.175)	(0.176)
Female			-0.382
			(0.558)
Order of Treatments	No	Yes	Yes
Constant	2.730****	4.324***	4.658***
	(0.270)	(1.469)	(1.598)
sigma			
Constant	2.186****	2.102****	2.094****
	(0.239)	(0.233)	(0.223)
N	154	154	154

Notes: Tobit estimates. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Non-Anonymous is a dummy variable that takes on the value 1 if principals made decisions in the non-anonymous treatment and 0 if they made decisions in the anonymous treatment. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table 3.5 reports the results of a Tobit regression where principals' sharing decisions for their friends is the dependent variable and it is bounded below and above by £0.00 and £8.00. The estimated coefficient for non-anonymous is interpreted as the extra amount principals share with their friends under non-anonymity compared to the anonymous

condition. Model (1) shows a significant coefficient for non-anonymous decisions, suggesting that the increase in principals' sharing decisions is positively and significantly driven by the expectation of future reciprocal favours. If principals' decisions for their friends are non-anonymous, then principals' sharing will increase to 62%. Our results in Model (1) are robust when we control for treatment order in Model (2). The result from Model (3) confirms our previous findings when controlling for principals' gender. From this section, we can conclude that principals share 62% more with their friend's when decisions are non-anonymous compared to when they are anonymous. This suggests that the role of expected reciprocity determines principals' sharing decisions when principals are paired with their friends. Our results are in line with Leider et al. (2009) confirming that generosity increases when the anonymity of decisions is removed.

- **Result 4:** Expected reciprocity drives the increase in principals sharing decisions when principals are paired with their friends and their decisions are non-anonymous.

Principals Delegation decision

Here we investigate the role of expected reciprocity as a motive for the decrease in principals' delegation decisions. We vary the observability of decisions between principals and their friends when principals have the option to delegate. This will allow us to distinguish if principals delegate less because they expect reciprocation in the future. Friends may behave more pro-social towards their friends because they expect their friends to reciprocate their generosity later and hence if decisions are not anonymous, they may behave more pro-social towards them. People do not expect anything from strangers since they may never see or interact with them again. By varying the anonymity of decisions among friends, we observe the role of expected reciprocity.

Table 3.6 presents a probit regression with marginal effects where the dependent variable is principals' delegation decision and takes the value 1 if principals decided to delegate their decision to an agent and 0 otherwise. To investigate the role of expected reciprocity we include a dummy variable non-anonymous to our regression. This dummy variable takes the value 1 if principals' decisions are observed by the recipient and it takes the value 0 if principals' decisions are not observed by the recipient. If principals' delegation is driven by expected reciprocity, we expect a significant coefficient for the dummy variable non-anonymous. We also control for principals' sharing decisions to have a better understanding of expected reciprocity induced by non-anonymous decisions. In

Table 3.6: Principals' delegation decisions for their friends when anonymity between the principal and the recipient varies - Marginal Effects.

Dependent variable: Principals Delegation Decisions	Model(1)	Model(2)	Model(3)
Non-Anonymous	0.0130	-0.00489	-0.00434
	(0.0627)	(0.0630)	(0.0637)
Principals Sharing Decision		0.0440**	0.0476**
		(0.0192)	(0.0194)
Female			0.0100
			(0.0887)
Order of Treatments	No	No	Yes
N	154	154	154

Notes: This table presents Probit regression results with marginal effects reported in percentage points. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Non-Anonymous is a dummy variable that takes on the value 1 if principals made decisions in the non-anonymous treatment and 0 if they made decisions in the anonymous treatment. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

the end we also control for principals' demographics and the order in which they make their decisions.

Results from Model (1) suggest that expected reciprocity does not significantly determine principals' delegation decisions. We observe a small and positive but not statistically significant coefficient for the non-anonymous dummy variable. This suggests that principals are more likely to delegate their decisions to agents when their decisions are observed by their friends. We then control for principals' sharing decisions while observing the anonymity of decisions in Model (2). The coefficient for observability of decisions by recipients becomes negative but is still very small and not significant. Our results from these two models are robust when we control for principals' gender and the order in which principals made their decisions In Model (3). These results suggest the principals' delegation decisions are not driven by expected reciprocity induced by removing anonymity of decisions between principals and their friends.[18]

- **Result 5:** Expected reciprocity does not drive the decrease in principals' delegation decisions.

[18]To check for the robustness of our results we also run a regression where we control for both selfish and pro-social agents' non-binding proposals while taking into consideration principals' anonymity level for their friends. The result of this regression is presented in Appendix.B.3.

Principals' Choice of Agent

To better understand principals' choice of agent we analyse the type of agent principals choose when decisions are not anonymous. In the previous section, we showed that principals' delegation decision is not driven by expected reciprocity, meaning that it does not matter if decisions are anonymous or not anonymous because principals are not likely to delegate their decision in either of the scenarios. However, we still observe a few principals who do delegate their decisions. In this section, we aim to understand if expected reciprocity can explain the type of agent chosen by the principals when the anonymity of decisions varies between principals and their friends.

Table 3.7: Principals' delegation decisions for their friends when anonymity between principal and recipient varies - Marginal Effects.

Dependent variable: Principals Delegation Decisions	Model(1)	Model(2)	Model(3)
Non-Anonymous	0.228***	0.244***	0.287****
	(0.0883)	(0.0892)	(0.0839)
Principals Sharing Decision		0.0503	0.0762**
		(0.0362)	(0.0350)
Female			0.0488
			(0.150)
Order of Treatments	No	No	Yes
N	45	45	45

Notes: This table presents Probit regression results with marginal effects reported in percentage points. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Non-Anonymous is a dummy variable that takes on the value 1 if principals made decisions in the non-anonymous treatment and 0 if they made decisions in the anonymous treatment. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Using a probit regression with marginal effects we study if the expected reciprocity drives principals' choice of agent. Our dependant variable is binary, and it takes the value 1 when principals delegate to the pro-social agent and 0 otherwise. As an independent variable, we include the dummy variable non-anonymous that shows variation in anonymity of principals' decisions when they are paired with their friends. If principals' decisions are observed by their friends, the independent variable will take the value 1 and it will take the value 0 if decisions are not observable. Given that principals' delegation decision is significantly determined by principals sharing decisions, we also include principals' sharing decisions in our model. In the end, we also control for principals'

gender and the order in which principals took part in the treatments. The result for this is presented in Table 3.7.

In Model (1) we study the sole effect of variation in anonymity. The coefficient for non-anonymous variables is positive and statistically significant which suggests that being not anonymous to your friends will increase the likelihood of choosing a more pro-social agent by 22 percentage points. This suggests that expected reciprocity significantly drives principals' choice of agent. Principals' delegation decision is significantly determined by the amount principals share with their friends. In Model (2) we also control for principals' sharing decisions. Our results are robust when we control for principals' initial sharing. In Model (3) we also control for other factors such as principals' gender and the order of treatments they participated. We confirm our results to be robust when controlling for principals' gender and the order in which principals made their decisions. These results suggest that principals' choice of agent is positively and significantly driven by principals' expectation of future reciprocal favours[19].

- **Result 6:** Principals' choice of pro-social agent is driven by expected reciprocity.

3.5 Guilt Aversion

In previous sections, we provided evidence on the effect of pro-social motives driving principals' sharing and principals' delegation decisions. As mentioned before, in our experiment principals are invited to the lab with their friends. Prior to attending the experiment, principals and their friends may have formed an agreement on their earnings. They may have decided on how much each party should earn beforehand, and this may affect their decisions. If principals do not follow their agreement with their friends, they might feel bad or guilty. Hence their sharing decisions and delegation decisions may vary if principals are guilt averse[20].

Guilt aversion is defined as the utility individuals lose when they believe they have not met others' expectations (Charness and Dufwenberg (2006); Ellingsen et al. (2010)). Using principals' beliefs on what they think the recipients would expect from them and

[19]For hypothesis 4 (p-value=0.0965), hypothesis 5 (p-value=0.8605) and hypothesis 6 (p-value=0.0853) we compute Bonferroni's adjusted p-values which suggest that the results reported here are not a consequence of multiple hypothesis testing.

[20]In the final questionnaire, we ask participants to state if they made an agreement with their friends prior to the experiment. We run a regression where we control for principals' prior agreements that may have taken place before and after the experiment. The Probit estimates for this are presented in Appendix B.6 and Appendix B.7.

comparing it with the amount they share we are able to have a measure of guilt aversion. We define guilt aversion as the difference between what principals initially share with the recipient and the amount principals believe the recipients are expecting from them. If principals and their friends have reached an agreement before the experiment, then a guilt-averse principal will share what they think their friends expect from them. For a guilt averse principal, the difference between principals sharing and principals' belief of recipients' expectation is zero or positive. During the experiment, the principals are asked to specify, in an incentivised setting, how much they think the recipients are expecting from them. If principals guess the amount, they think recipients expect from them correctly, they receive £0.40. If their guess deviated by £1.00 in either direction from the allocation decision, they received an additional £0.20. They will receive no additional payment if otherwise.

We do not find guilt aversion to affect principals' motives in determining principals' sharing and delegation decision[21]. Principals' sharing decision is determined by both directed altruism and expected reciprocity for a given level of guilt aversion. Principals are more generous with the recipient when they are more guilt averse. Principals' delegation decision is determined by only directed altruism when controlling for the level of guilt aversion and principals shared offer. We find that expected reciprocity does not determine principals' delegation decisions even when we control for principals' sharing and their level of guilt aversion.

- **Result 7:** Controlling for guilt aversion does not affect the explanatory power of directed altruism and expected reciprocity in driving principals' delegation behaviour.

3.6 Conclusion

Delegation is an important part of economic and business interactions. It is therefore of crucial importance to understand the behavioural motives that drive delegation decisions. Recent studies suggest that people delegate their decisions to avoid the responsibility of a selfish action. In this case, delegation is used as a way to exploit the moral wiggle room and shift the blame. However, delegation is not considered an efficient technique to use when the social distance between individuals is low. In a principal-agent setting, a principal is less likely to delegate their decision to an agent if they are in a

[21]The results for this are presented in Appendix B.4 and Appendix B.5.

closer social distance to the recipient. Our paper contributes to this line of research and investigates the pro-social motives driving the decrease in principals' delegation decisions. We focus on two motives: directed altruism induced through variation in social distance between a principal and a recipient, and expectation of future reciprocal favours induced through variation in anonymity between principal and recipient (Leider et al. (2009); Leider et al. (2010)).

We find that for a given sharing decision, the principals' delegation decision is driven by directed altruism. The closer principals are to the recipient the more altruistic they feel towards them and the less likely they are to delegate their decisions. We do not find expected reciprocity to play a significant role in principals' delegation decisions. However, principals' choice of agent is significantly determined by principals' expectation of future reciprocal favours. If principals do delegate their decisions, they are more likely to hire a more pro-social agent to make the decision on their behalf. This is because principals would want to signal their generosity to their friends without making their delegation decisions conditional on expected reciprocity.

In this study, we show that because of altruistic motives, delegation is not the best way to exploit the moral wiggle room when social distance is minimised. Although social distance plays a major role in determining delegation decisions; they do not provide the full picture. Past research in psychology has demonstrated that emotions are a key component of individuals' pro-sociality (Cubitt et al., 2011). Reducing social distance may trigger such moral emotions and discourage people from delegating their decisions. Further studies on social emotions are needed to shed light on other motives behind delegation decisions. Observing the role of self and social image and maybe even social norms may shed more light on delegation decisions in various social settings.

Overall, delegation has been shown to be a common tool to shift the blame and exploit the moral wiggle room, however, it is less frequently used when social distance is minimised. Altruistic motives induced by lower social distance create a closer bond between individuals and make delegation a less attractive option. When decisions are delegated, the blame and responsibility for those decisions shift. In the absence of social distance variation, principals delegate to not feel direct responsibility for making a selfish decision. Since principals do not make decisions directly, they feel less responsible toward the recipient. Lower responsibility may, however, become less salient when the social relationships of the principals and recipients are more transparent. Given that altruistic motives reduce the likelihood of delegation they may also reduce the likelihood of responsibility. In this study, we do not investigate the role of responsibility. Whether altruistic motives induced by lower social distance can increase responsibility towards

others is a topic that could be explored further in future work.

3.7 Appendix

3.7.1 Appendix A. Experimental Material

Appendix A contains the invitation letters sent to the subjects (Appendix A.1) and the general instructions used in the experiment (Appendix A.2). Differences across treatments are indicated in square brackets.

A.1 Invitation letters

[Invitation Letter]

[Invitation letter for the Friends-Friends Treatment and the Friends-Stranger Treatment]

Hello #fname# #lname#!

You are invited to participate in an experiment in our laboratory. We would like to invite YOU plus ONE of your friends to take part in our coming experiment.

IMPORTANT INFORMATION

To participate in this experiment, YOU are required to bring ONE other person who knows you. Your friend needs to

1.…be someone you know (e.g. a friend, a housemate, someone on your course etc.).

2.…be someone who knows you (e.g. a friend, a housemate, someone on your course etc.).

3.…be able to attend the session you have signed up for.

The sessions are scheduled for the following times:

#sessionlist#

Both you and your friend can only participate in ONE of the above sessions. If YOU plus your FRIEND would like to participate, please click on the link below to sign up to the session of your choice. After signing up, reply to this e-mail to communicate the full name of your FRIEND who will participate (Your friend does not need to sign up, but you must ensure that s/he attends the session with you).

#link#

(If you cannot click on the link, copy it to the clipboard by selecting it, right-click and choosing "Copy", and then paste it into the address line in your browser by right clicking there and choosing "Paste".)

In order to participate, you have to be registered for the session. Please arrive 5 minutes before the scheduled time and bring an ID card with you.

Please note: people that sign up to a session and do not turn up cause us problems; sign up to a session only if you are sure you can attend it and that YOU are able to bring ONE friend as well. If you sign up please make sure YOU and your FRIEND do attend.

We hope to see you soon in one of our sessions.

Best regards,The BEADS team

A.2 Instructions

Instructions

General Instructions

Welcome! You are about to take part in a decision making experiment. This experiment has been financed by various research foundations. Just for showing up you have already earned £2.50. You can earn additional money depending on the decisions made by you and other participants. It is therefore very important that you read these instructions with care.

It is important that you remain silent and do not look at other people's work. If you have any questions, or need assistance of any kind, please raise your hand and an experimenter will come to you. If you talk, laugh, exclaim out loud, etc., you will be asked to leave and you will not be paid. We expect and appreciate your following of these rules.

We will first jointly go over the instructions. After we have read the instructions, you will have time to ask clarifying questions. Please do not touch the computer or its mouse until you are instructed to do so. Thank you.

Role Description in the Experiment

During the experiment, participants will be assigned the role of either 'Participant A', 'Participant B' or 'Participant C'. In total, there are 16 participants in the room: 7 of them will be Participant As, 7 of them will be Participant B's and 2 of them will be Participant Cs. If you are assigned the role of Participant A you will be in a group with one other person in the room who is assigned the role of Participant B. If you are assigned the role Participant C, you will not be paired with any one and you will be asked to make decisions on behalf of Participant A.

You will remain in the same role for the entire experiment and you will be paid based on the decisions you make in this role.

Decision Making

Participant A will be endowed with £8.00 and will be asked to make an allocation decision between him/herself and Participant B. In particular, Participant A will be asked to indicate how much of the £8.00 s/he would like to give to Participant B (using

amounts up to one decimal point). Any remaining amount (out of the £8 endowment) will be kept by Participant A. Participant B has no option but to accept Participant A's decision during the experiment.

If you are assigned the role of Participant C, you will either be Participant C1 or Participant C2. You will be asked to propose an allocation to Participant A. You will have to state how much of Participant A's £8.00 you would allocate to Participant B (using amounts up to one decimal point). Following your proposal, Participant A will be informed of the proposed allocation presented by each of the two Participants Cs. Participant A has then to decide either to send his own allocation as the final allocation to Participant B or choose one of the two Participant Cs to make the final allocation on his/her behalf. Participant C will then need to make the final allocation to Participant B on behalf of Participant A. If either of Participant Cs are chosen to make the allocation decision they will be able to send any amounts from the £8.00 of Participant As endowment (using amounts up to one decimal point). The amounts they send can be the same or different from their first proposed allocation.

Scenarios

During the experiment, Participant As will be asked to make allocation decisions in four different scenarios. Only one of the four scenarios will determine their payment for the experiment and it will be randomly chosen at the end. Each scenario is equally likely to be selected. The four scenarios are described below.

Scenario 1: In this scenario, Participant A will be paired with Participant B who is a random person in the room (who is not their friend). If this scenario is randomly selected for payment, Participant B WILL NOT receive any information about their relationship with Participant A.

Scenario 2: In this scenario, Participant A will be paired with Participant B who is a random person in the room (who is not their friend). If this scenario is randomly selected for payment, Participant B WILL receive information about their relationship with Participant A.

Scenario 3: In this scenario, Participant A will be paired with Participant B who is their friend (whom they came to the lab with). If this scenario is randomly selected for payment, Participant B WILL NOT receive information about their relationship with Participant A.

Scenario 4: In this scenario, Participant A will be paired with Participant B who is their friend (whom they came to the lab with). If this scenario is randomly selected

for payment, Participant B's WILL receive information about their relationship with Participant A.

Participant As will be presented each of these scenarios in a random order.

Payment

As described above, at the end of the experiment, the computer will randomly select one of the four scenarios and you will be paid based on the outcomes of the randomly selected scenario. The earnings for each participant are described below.

Participant A: If you are assigned the role of Participant A, your earnings will be your initial endowment minus the amount given to Participant B. The amount given to Participant B can be either your initial allocation or the final allocation made by Participant C on your behalf.

Participant B: If you are assigned the role of Participant B, your earnings will be the amount given to you. The amount given to you can be either Participant A's initial allocation or the final allocation made by Participant C on behalf of Participant A.

Participant C: If you are assigned the role of Participant C, you are given £5.00 as an initial endowment. You can earn more or less money depending on how many Participant As choose you to make the final allocation on their behalf. In particular, if you are not chosen by any Participant A, you will lose £0.60 and your earnings will be £4.40. If you are chosen by one Participant A, you will lose £0.30 and your earnings will be £4.70. If you are chosen by two Participant As, you will not lose anything and your earnings will be £5.00. If you are chosen by more than two Participant As, you will receive £0.30 for each Participant A, who chooses you.

At the end of the experiment, the total amount you have earned will privately be paid to you in cash.

Do you have any questions? Please raise your hand and an experimenter will come to your desk. Please do not ask any question out loud.

3.7.2 Appendix B. Additional data analysis

Appendix B provides additional data analysis for this chapter.

B.1. Principals delegation decisions in the non-anonymous treatment when social distance varies - regression results.

Table 3.8: Principals delegation decisions in the non-anonymous treatment when social distance varies - regression results.

Dependent variable: Principals Delegation Decisions	Model(1)	Model(2)	Model(3)
Friend	-0.414**	-0.566**	-0.557**
	(0.200)	(0.224)	(0.228)
Principals Sharing decision		0.124**	0.112*
		(0.0598)	(0.0608)
Female			-0.112
			(0.235)
Order of Treatments	No	No	Yes
Constant	-0.114	-0.388**	-0.988
	(0.144)	(0.176)	(0.762)
N	154	154	154

Notes: Probit estimates. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Friend is a dummy variable which takes on the value 1 if principals are paired with their friends and 0 if they are paired with strangers. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.2. Principals delegation decisions and variation in social distance in the anonymous treatment when controlling for pro-social and selfish agents no-binding proposals - regression results.

Table 3.9: Principals delegation decisions and variation in social distance in the anonymous treatment when controlling for pro-social and selfish agents no-binding proposals - regression results.

Dependent variable: Principals Delegation Decisions	Model(1)	Model(2)	Model(3)	Model(4)	Model(5)	Model(6)
Friend	-0.286	-0.588**	-0.164	-0.0662	-0.282	-0.272
	(0.214)	(0.242)	(0.234)	(0.239)	(0.285)	(0.280)
Principals Sharing Decision		0.237****			0.236****	0.246****
		(0.0560)			(0.0551)	(0.0582)
Pro-social Agent Proposal			-0.108		-0.0864	-0.0746
			(0.107)		(0.114)	(0.115)
Selfish Agent Proposal				-0.153*	-0.142	-0.168*
				(0.0918)	(0.0976)	(0.0945)
Female						-0.0245
						(0.221)
Order of Treatments	No	No	No	No	No	Yes
Constant	-0.280*	-0.710****	0.0114	-0.133	-0.348	-1.028
	(0.146)	(0.178)	(0.320)	(0.167)	(0.342)	(0.894)
N	154	154	154	154	154	154

Notes: Probit estimates. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Friend is a dummy variable which takes on the value 1 if principals are paired with their friends and 0 if they are paired with strangers. Using Order of Treatments, we control for the order in which principals made their decisions.

* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.3. Principals delegation decisions and variation in anonymity for their friends when controlling for pro-social and selfish agents no-binding proposals - regression results.

Table 3.10: Principals delegation decisions and variation in anonymity for their friends when controlling for pro-social and selfish agents no-binding proposals - regression results.

Dependent variable: Principals Delegation Decisions	Model(1)	Model(2)	Model(3)	Model(4)	Model(5)	Model(6)
Non-Anonymous	0.0378	-0.0147	0.0179	0.0673	-0.00100	0.0157
	(0.182)	(0.190)	(0.186)	(0.186)	(0.199)	(0.202)
Principals Sharing Decision		0.132**			0.129**	0.147**
		(0.0604)			(0.0605)	(0.0619)
Pro-social Agent Proposal			0.178		0.119	0.172
			(0.239)		(0.236)	(0.243)
Selfish Agent Proposal				-0.0438	-0.0350	-0.0663
				(0.106)	(0.106)	(0.100)
Female						0.0311
						(0.276)
Constant	-0.566****	-0.967****	-1.248	-0.460	-1.331	-2.589*
	(0.152)	(0.231)	(0.922)	(0.292)	(1.031)	(1.435)
N	154	154	154	154	154	154

Notes: Probit estimates. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Non-Anonymous is a dummy variable which takes on the value 1 if principals made decisions in the non-anonymous treatment and 0 if they made decisions in the anonymous treatment. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.4. Principals Shearing decisions when controlling for guilt aversion - regression results

Table 3.11: Principals sharing decisions when controlling for guilt aversion - regression results.

Dependent variable:Principals Sharing Decisions	Model(1)	Model(2)	Model(3)	Model(4)
Friend	1.495****	1.501****		
	(0.271)	(0.275)		
Non-Anonymous			0.505****	0.507****
			(0.148)	(0.149)
Guilt Aversion	0.788****	0.803****	0.853****	0.848****
	(0.0980)	(0.105)	(0.116)	(0.126)
Female		0.384		0.285
		(0.424)		(0.457)
Order of Treatments	No	Yes	No	Yes
Constant	1.524****	1.252	3.049****	3.013**
	(0.236)	(1.242)	(0.236)	(1.383)
sigma				
Constant	1.857****	1.848****	1.717****	1.706****
	(0.188)	(0.189)	(0.223)	(0.229)
N	154	154	154	154

Notes: Tobit estimates. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Non-Anonymous is a dummy variable which takes on the value 1 if principals made decisions in the non-anonymous treatment and 0 if they made decisions in the anonymous treatment. The variable Non-Anonymous is a dummy variable which takes on the value 1 if principals made decisions in the non-anonymous treatment and 0 if they made decisions in the anonymous treatment. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.5. Principals delegation decisions when controlling for guilt aversion - regression results

Table 3.12: Principals delegation decisions when controlling for guilt aversion - Marginal Effects.

Dependent variable: Principals Delegation Decisions	Model(1)	Model(2)	Model(3)	Model(4)
Friend	-0.0967	-0.186**		
	(0.0756)	(0.0751)		
Non-Anonymous			0.00745	0.00387
			(0.0608)	(0.0621)
Guilt Aversion	0.0604***	0.0134	0.0707***	0.0699**
	(0.0214)	(0.0281)	(0.0228)	(0.0310)
Principals Sharing decision		0.0733****		0.0179
		(0.0213)		(0.0263)
Female		-0.0242		0.0545
		(0.0746)		(0.0899)
Order of Treatments	No	Yes	No	Yes
N	154	154	154	154

Notes: This table presents Probit regression results with marginal effects reported in percentage points. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Friend is a dummy variable which takes on the value 1 if principals are paired with their friends and 0 if they are paired with strangers. The variable Non-Anonymous is a dummy variable which takes on the value 1 if principals made decisions in the non-anonymous treatment and 0 if they made decisions in the anonymous treatment. Using Order of Treatments, we control for the order in which principals made their decisions.

* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.6. Principals delegation decisions and variation in social distance in the anonymous treatment when controlling for principal and recipients prior agreements - regression results.

Table 3.13: Principals delegation decisions and variation in social distance in the anonymous treatment when controlling for principal and recipients prior agreements - regression results.

Dependent variable: Principals Delegation Decisions	Model(1)	Model(2)	Model(3)	Model(4)
Friend	-0.284	-0.290	-0.293	-0.622**
	(0.218)	(0.217)	(0.217)	(0.244)
Principals Sharing Decision				0.250****
				(0.0580)
Female				-0.0509
				(0.219)
Share Before experiment	-0.354*			-0.116
	(0.210)			(0.225)
Share After experiment		-0.273		-0.0496
		(0.211)		(0.273)
Share with Friend			-0.317	-0.337
			(0.203)	(0.255)
Order of Treatments	No	No	No	Yes
Constant	-0.154	-0.126	-0.134	-0.949
	(0.170)	(0.197)	(0.180)	(0.788)
N	154	154	154	154

Notes: Probit estimates. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Friend is a dummy variable which takes on the value 1 if principals are paired with their friends and 0 if they are paired with strangers. The variable Share Before Experiment takes the value 1 if principals made an agreement prior to the experiment to share their earnings and 0 otherwise. The variable Share After Experiment takes the value 1 if participants said they will share their earnings with others after the experiment and 0 otherwise. The variable Share with Friend takes the value 1 if participants will share their earnings with their friends in general and 0 otherwise. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.7. Principals delegation decisions and variation in anonymity for their friends when controlling for principal and recipients prior agreements - regression results.

Table 3.14: Principals delegation decisions and variation in anonymity for their friends when controlling for principal and recipients prior agreements - regression results.

Dependent variable: Principals Delegation Decisions	Model(1)	Model(2)	Model(3)	Model(4)
info	0.0378	0.0404	0.0428	-0.00954
	(0.182)	(0.184)	(0.185)	(0.201)
Principals Sharing Decision				0.165**
				(0.0671)
Female				0.0196
				(0.263)
Share Before Experiment	0.00405			0.253
	(0.256)			(0.269)
Share After Experiment		-0.285		-0.209
		(0.244)		(0.348)
Share with Friend			-0.311	-0.367
			(0.242)	(0.368)
Order of Treatments	No	No	No	Yes
Constant	-0.567***	-0.410**	-0.430**	-1.870*
	(0.175)	(0.203)	(0.193)	(0.964)
N	154	154	154	154

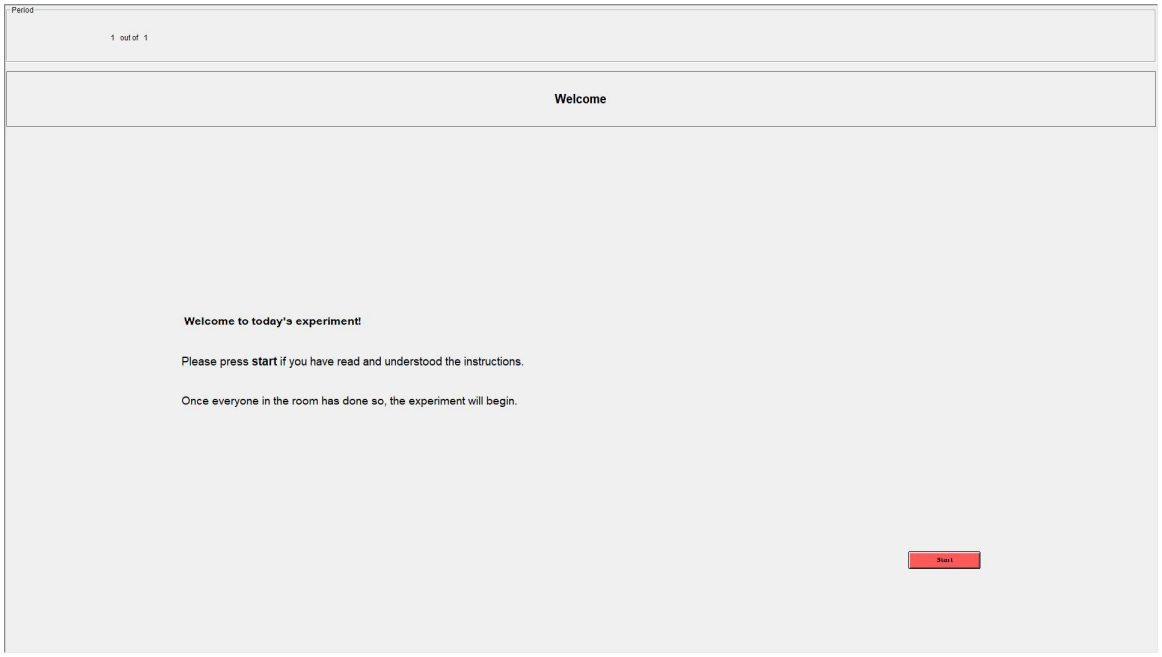
Notes: Probit estimates. Probit estimates. Robust standard errors are presented in parentheses and observations are clustered at the individual level (adjusted for 77 clusters). The variable Non-Anonymous is a dummy variable which takes on the value 1 if principals made decisions in the non-anonymous treatment and 0 if they made decisions in the anonymous treatment. The variable Share Before Experiment takes the value 1 if principals made an agreement prior to the experiment to share their earnings and 0 otherwise. The variable Share After Experiment takes the value 1 if participants said they will share their earnings with others after the experiment and 0 otherwise. The variable Share with Friend takes the value 1 if participants will share their earnings with their friends in general and 0 otherwise. Using Order of Treatments, we control for the order in which principals made their decisions.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

3.7.3 Appendix C. Experiment Screen-shots

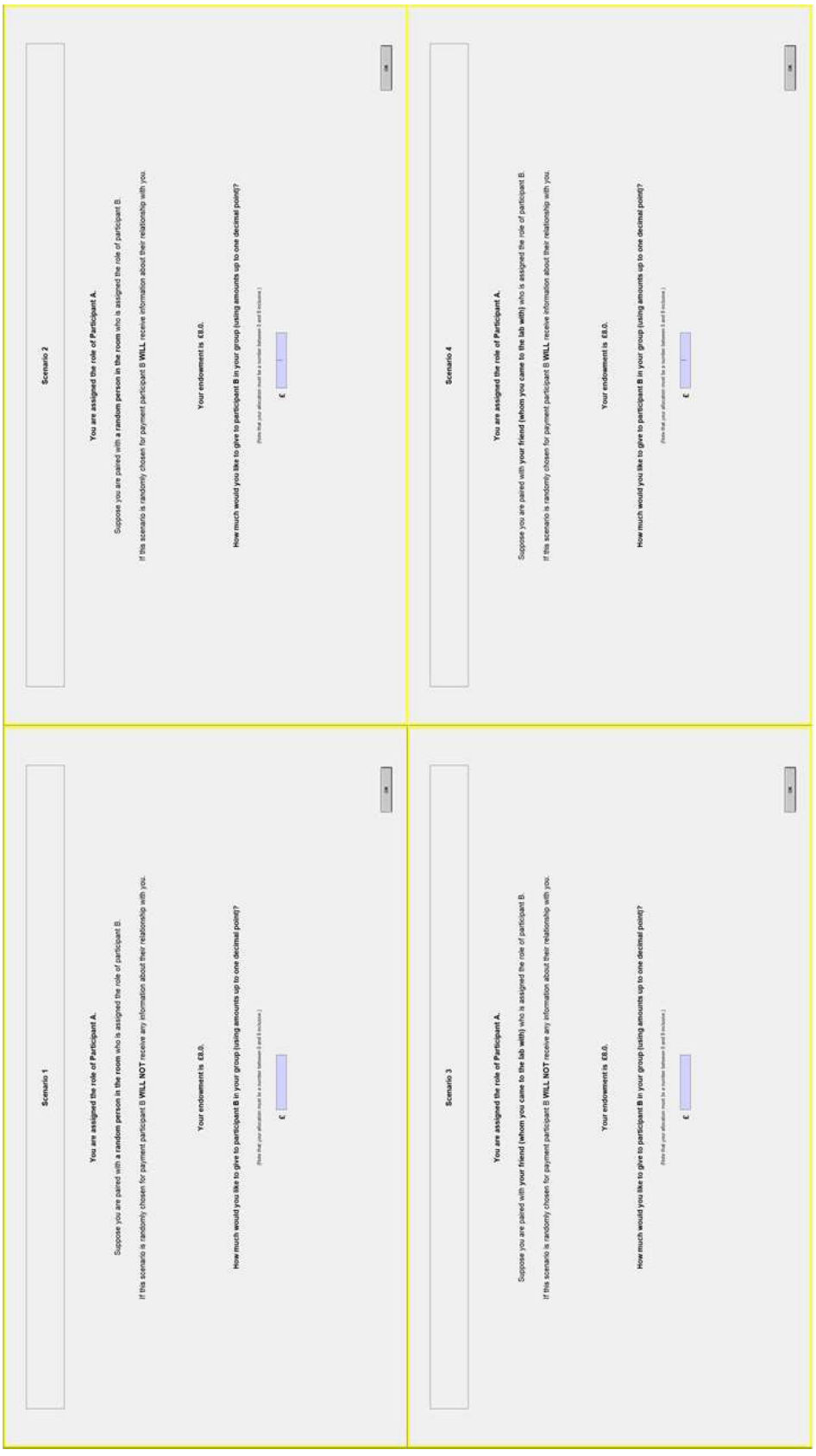
In the screen shots the scenarios refer to each treatment:

- Scenario 1: Stranger-Anonymous treatment
- Scenario 2: Stranger-Non-Anonymous treatment
- Scenario 3: Friends-Anonymous treatment
- Scenario 4: Friends-Non-Anonymous treatment

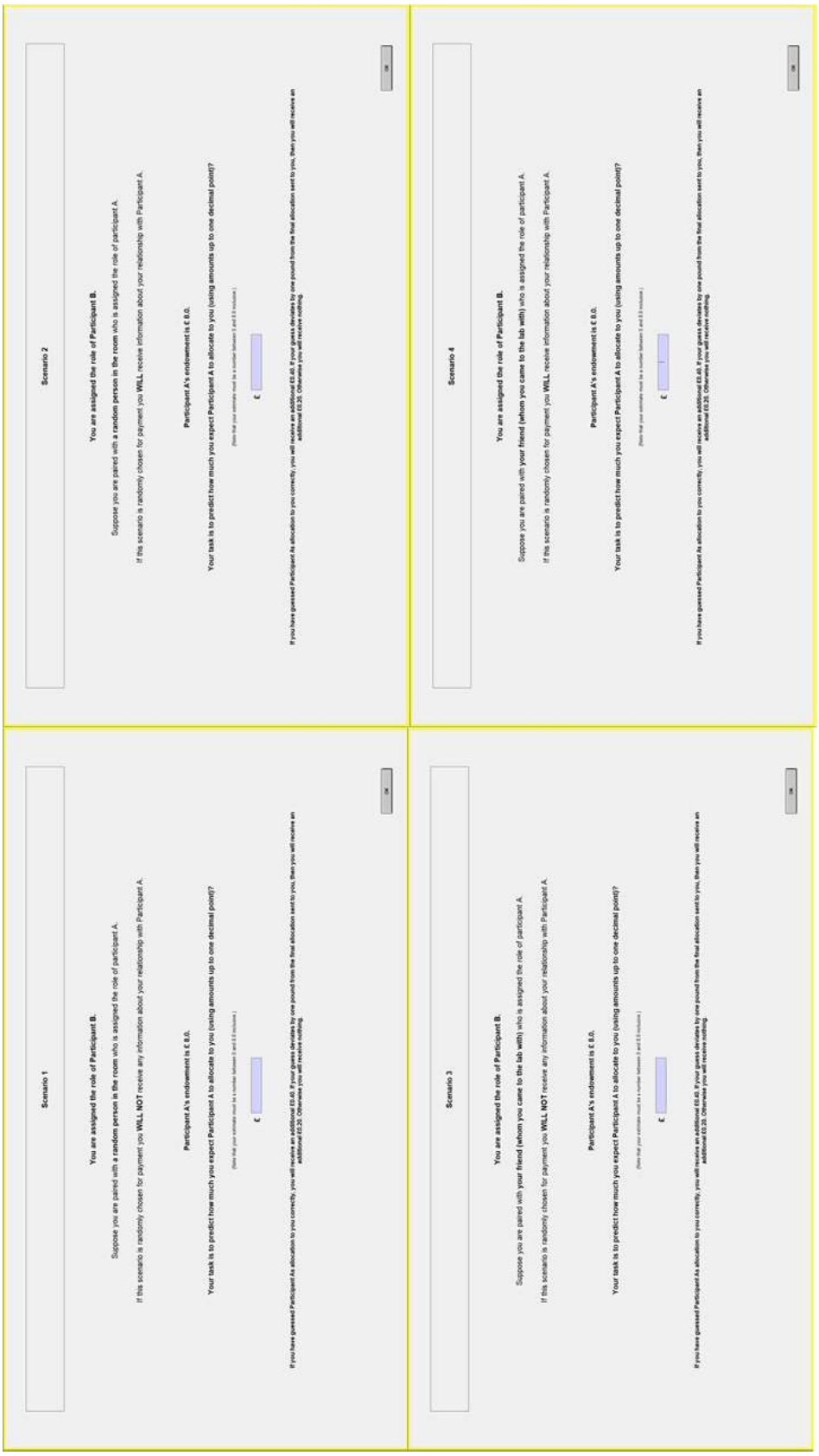
Welcome Screen



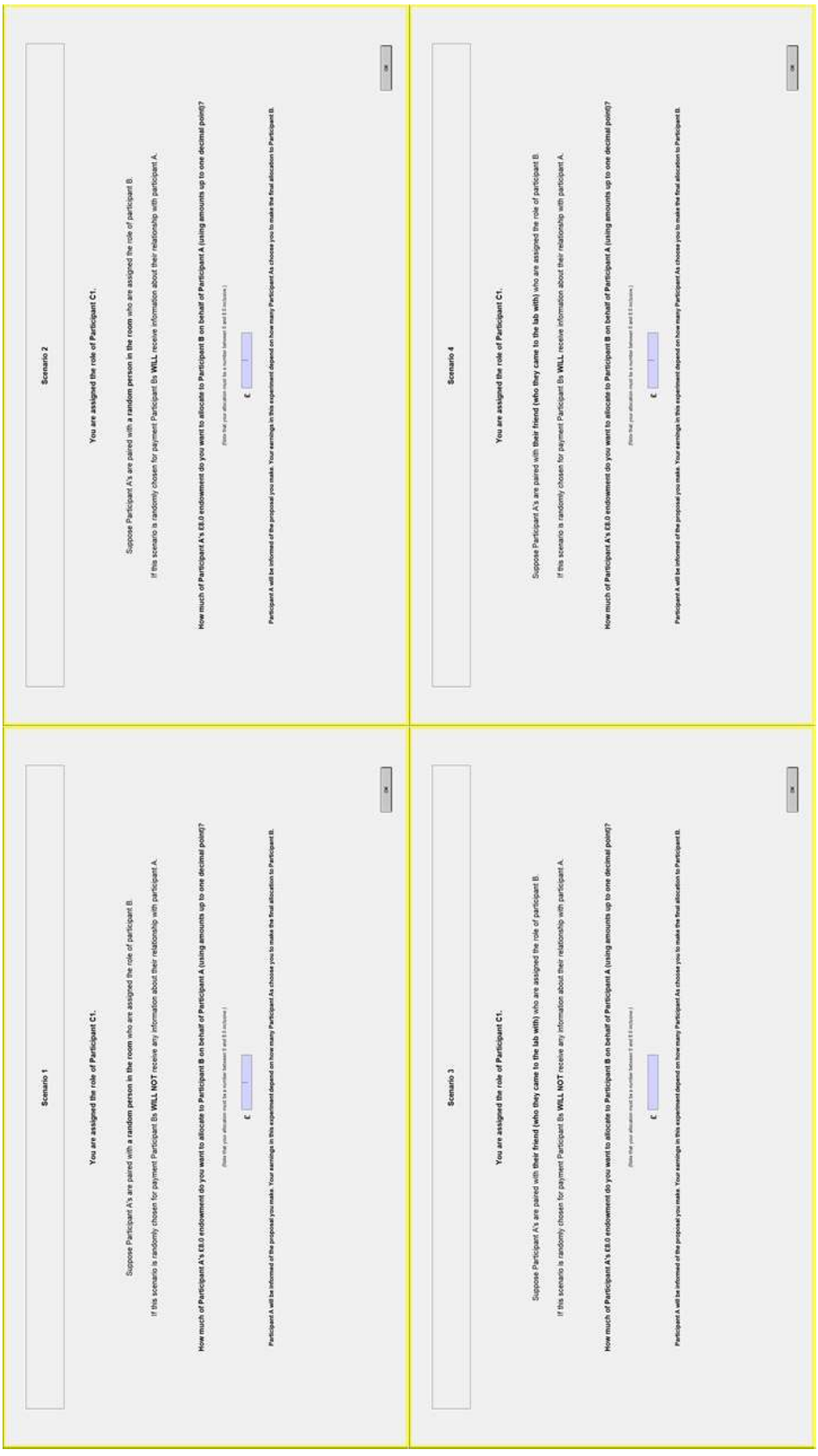
Principals Sharing Decision



Recipients First Order Beliefs



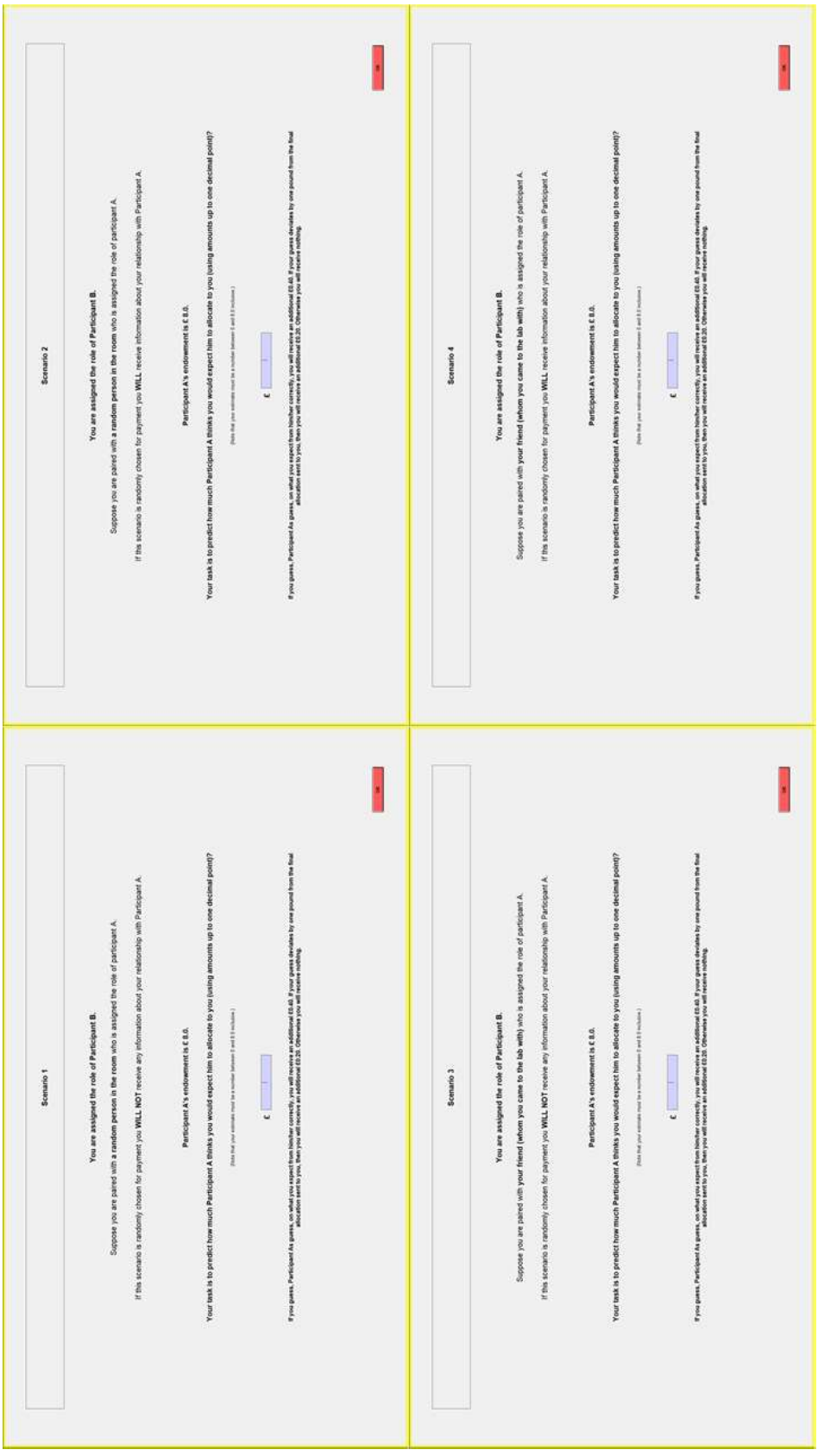
Agents Non-Binding Proposals



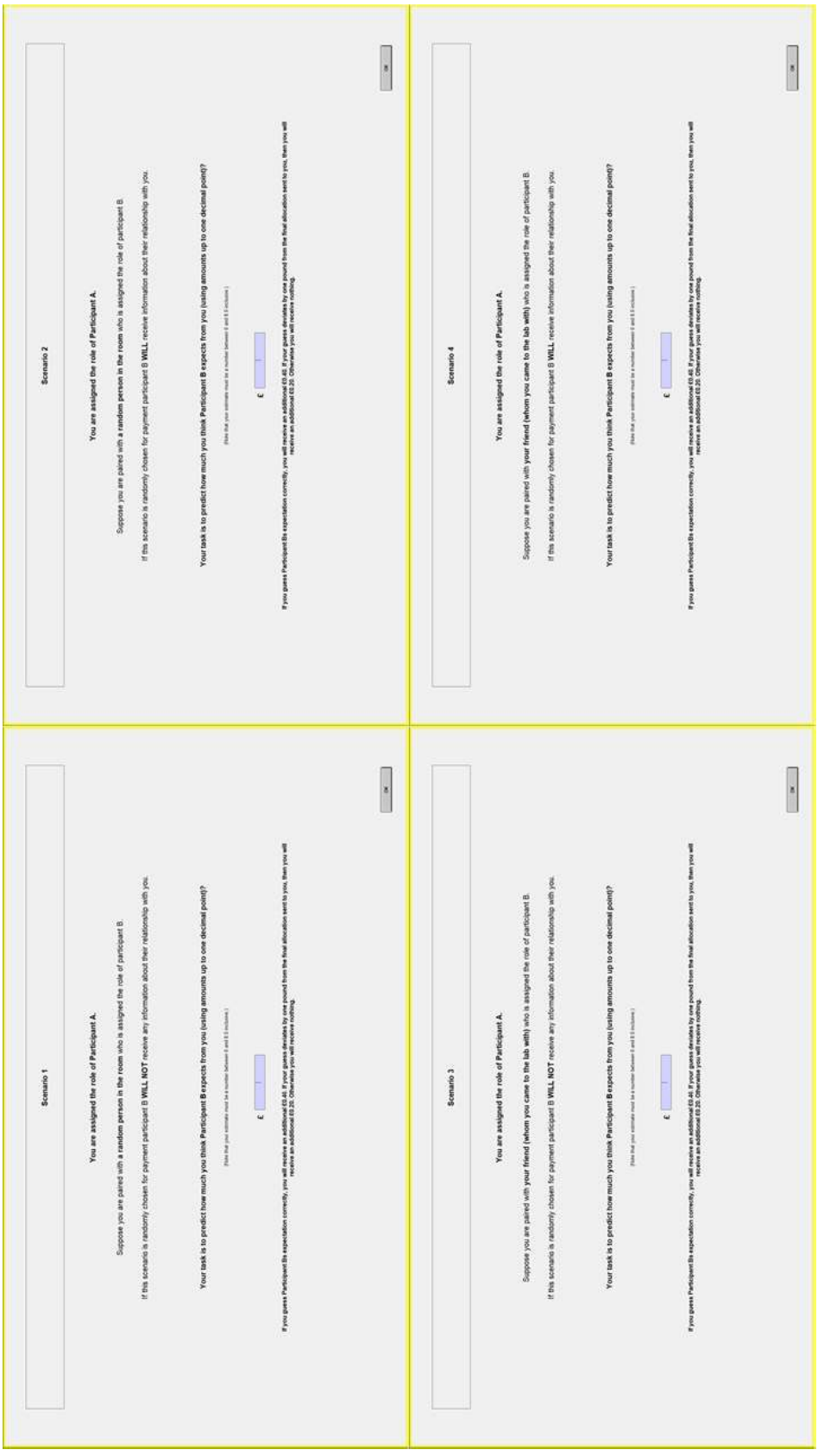
Principals Delegation Decision



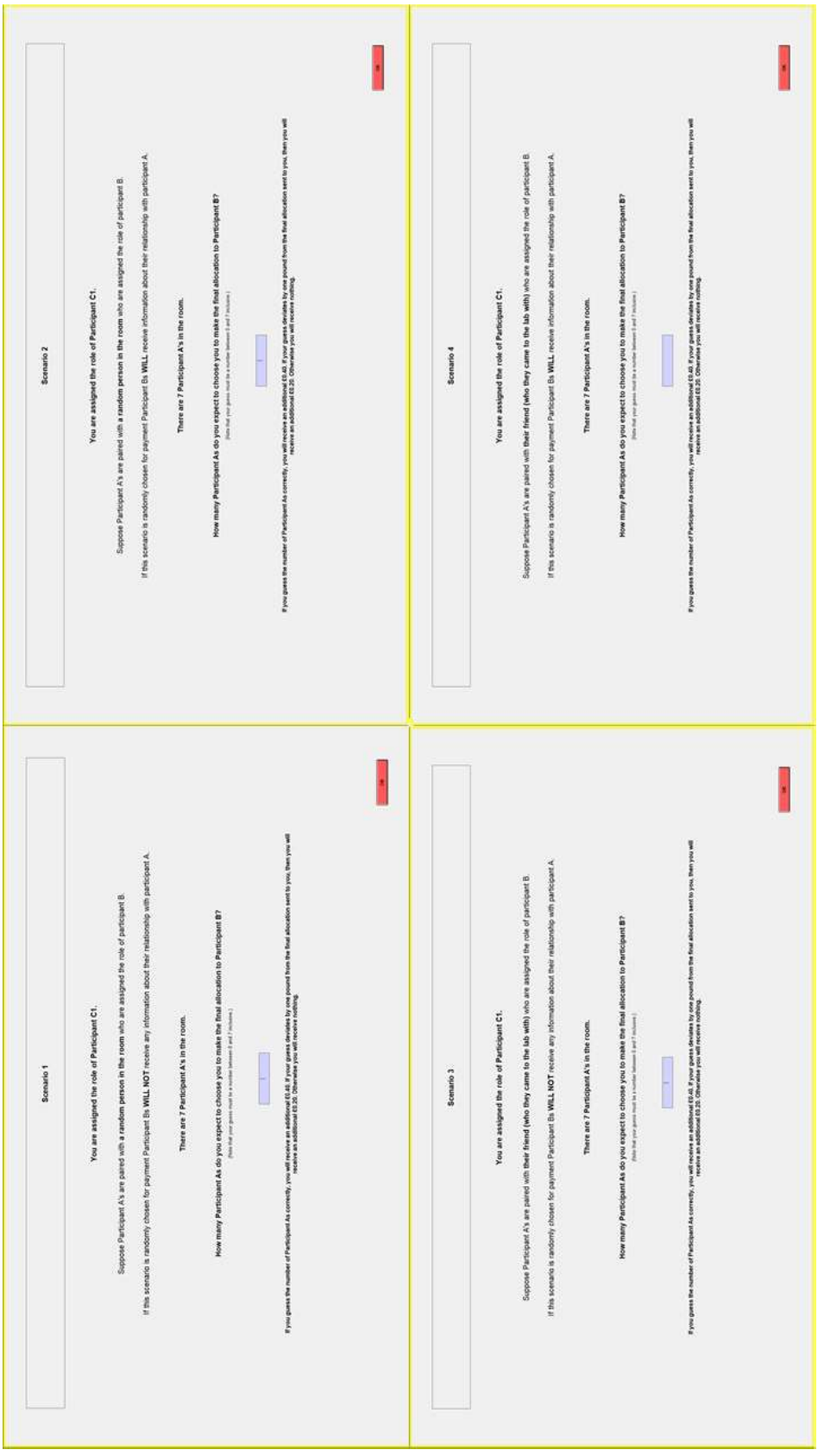
Recipients Second Order Beliefs



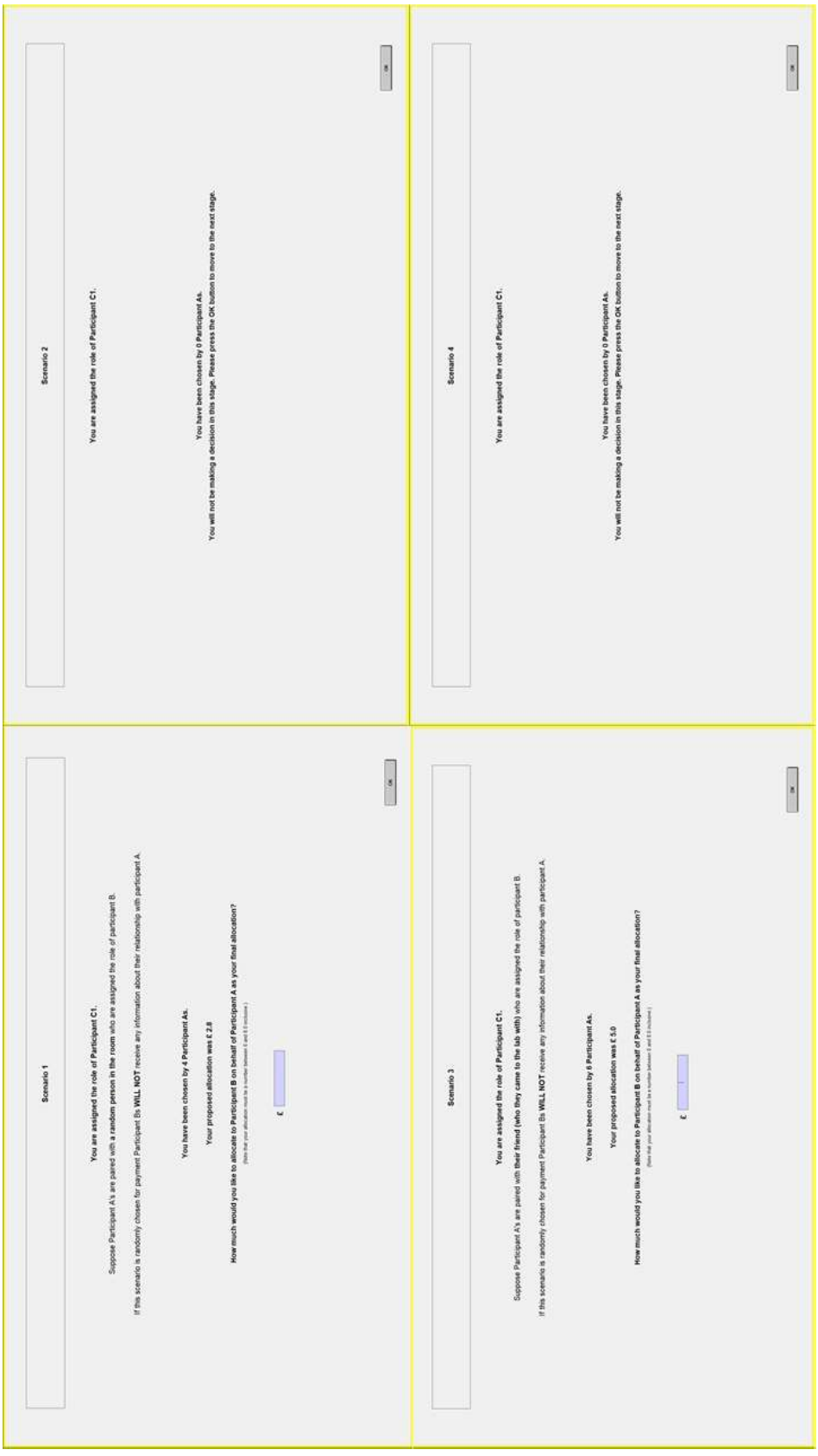
Principals First Order Beliefs



Agents First Order Beliefs

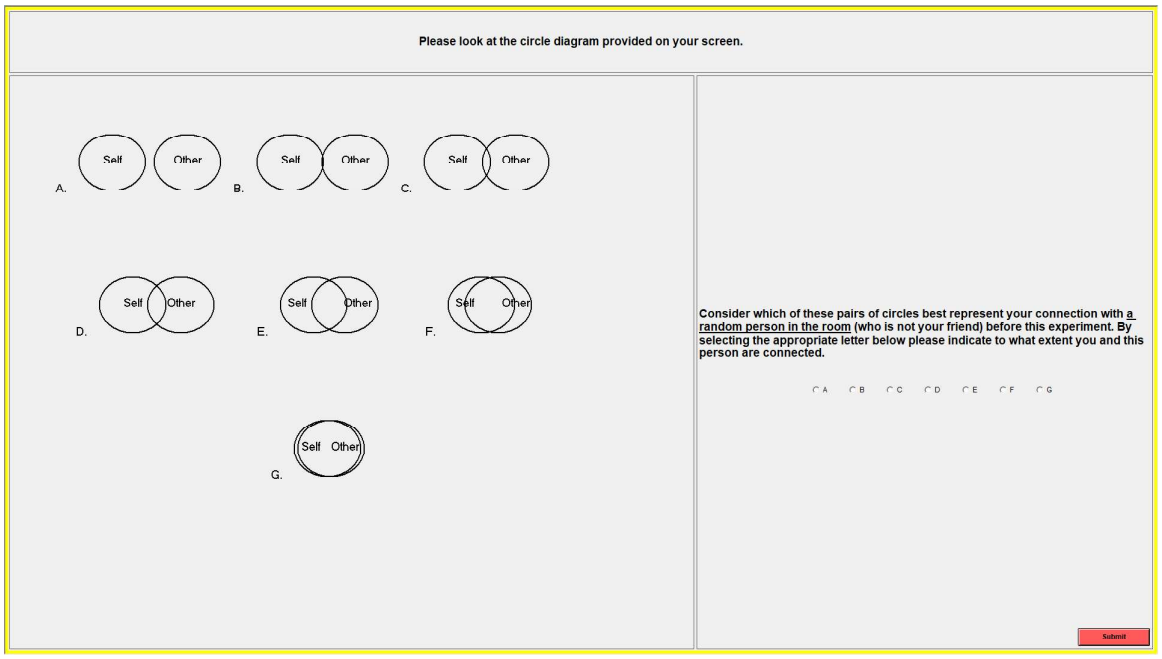


Agents Final Decision

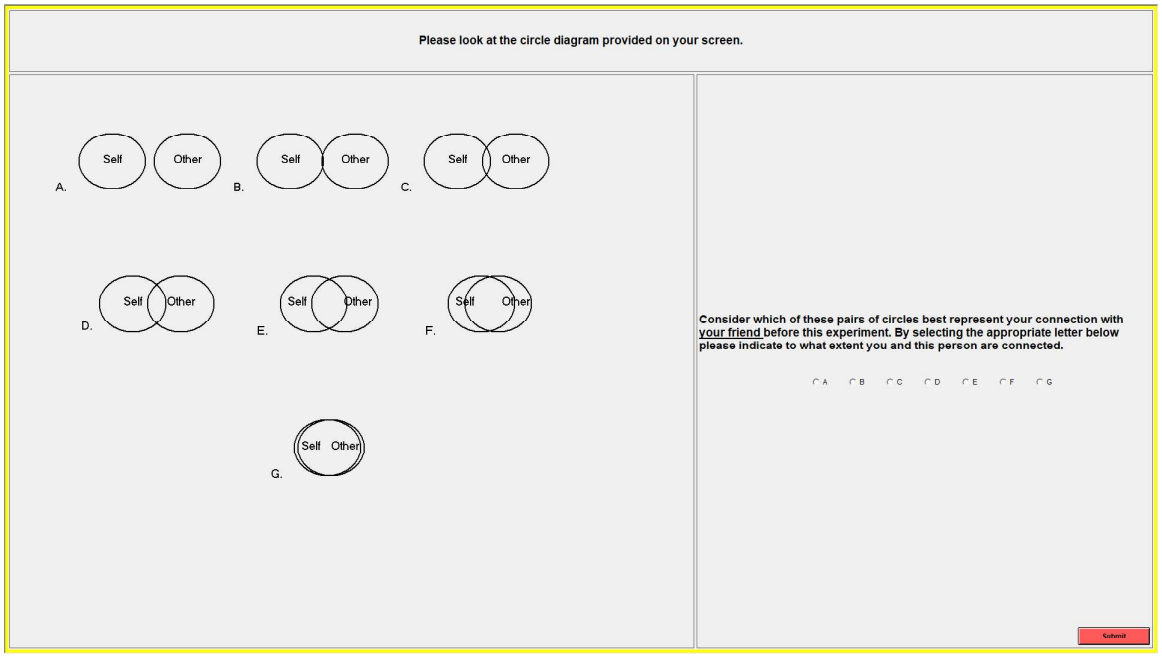


Inclusion of Others in the Self (IOS)

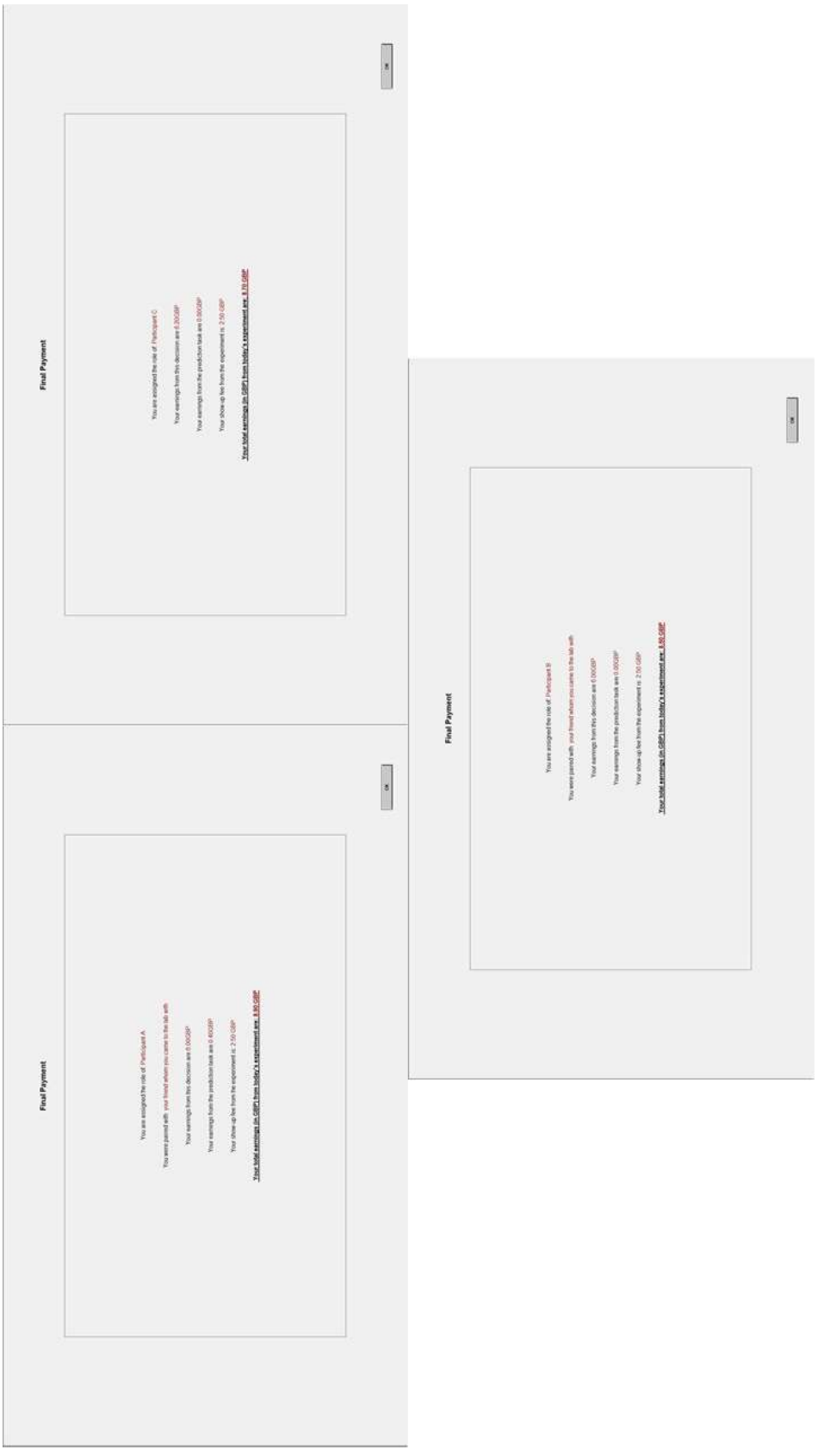
IOS for Stranger



IOS for Friends



Payoff Screen



Chapter 4

Performance, Competition and the role of Culture

4.1 Introduction

Culture is defined as a set of norms, values and beliefs which is acquired from other members of the same species through teaching, imitation, and other forms of social transmission (Boyd and Richerson, 2005) and it is known to play a major role in shaping economic decisions (Alesina and Giuliano, 2015)[1]. Numerous studies in the past decades have provided experimental evidence, discussing the role of culture in relation to various measures of economic behaviour. For example, there is an extensive line of studies that focus on cultural differences in bargaining behaviour in an ultimatum game. These studies find significant differences in proposer and responder behaviour across countries (Roth et al. (1991); Henrich (2000)). There is also a huge literature on the effect of cultural differences on contributions, in a public good game (Herrmann and Thöni (2003); Finocchiaro Castro (2008)).

Culture not only shapes decisions but also determines social and individual behaviours (Leibbrandt et al., 2013). One important behaviour that is affected by culture, is social distance and closeness towards others within our culture. Extensive studies on cultural social distance suggest that when people are from the same society they feel closer and they are more generous and more trusting towards each other (Buchan and Croson (2004); Ma et al. (2015); Cameron et al. (2015))[2]. This has been studied in the field

[1] Culture is known to be resistant to change and can persist over long periods of time (Guiso et al. (2006); Nunn and Wantchekon (2011); Alesina et al. (2013)).

[2] Studies on social distance show that people behave more pro-social toward others when the social distance between them and others is smaller (Hoffman et al. (1996); Charness and Gneezy (2008)).

by Etang et al. (2011) where they find that villagers are more generous towards those from their own village than those from another village in West Cameroon. There is also an extensive line of literature that focuses on how social distance toward others affects performance and competitiveness (Cornaglia et al., 2019). Social distance is known as the degree of closeness between individuals involved in a certain situation (Charness and Gneezy, 2008). To determine the degree of social distance we measure the level of closeness between individuals using a tool known as the IOS scale (Gachter et al., 2015). In this chapter, we build on this line of literature and study how closeness within a cultural group affects performance under different compensation incentives.

Monetary incentives play an important role in peoples' performance in the workplace (Burks et al., 2006). Recent studies on incentivised performance show that in a competitive payment scheme individuals report having higher performance levels and higher effort levels. They perform significantly better in a competitive condition compared to a fixed condition (Dohmen and Falk, 2011). Different payment schemes can, not only impact productivity and accountability (So et al., 2017), but they also significantly influence attitudes in the workplace (Samnani and Singh, 2014). Although monetary incentives play an important role in performance, they are not the only contributing factor. Individual characteristics (Goldfarb and Xiao, 2011), social incentives (Ashraf and Bandiera, 2018), competitive traits (Fletcher et al., 2008) and culture (Leibbrandt et al., 2013) are some of the other factors that determine performance.

The goal of this paper is to understand how two culturally diverse groups perform and compete under various payment schemes. Using the framework introduced by Niederle and Vesterlund (2007) we conduct laboratory experiments and study individual's tournament entry decisions and their performance in a competitive and non-competitive environment. We first pair participants in a group with a random person in the room where neither pair receives information about their paired partner. Participants are asked to solve the addition of four randomly chosen two-digit numbers in a piece rate (fixed payment and non-competitive) and a tournament (winner take all and competitive) payment scheme. Once participants complete these two tasks, they are asked to select between either a fixed payment option or a competitive payment option for their final task. Their decision can determine how willing they are to enter a competition. With this setup, participants can obtain relevant experience before making their payment decision for the final task. With these tasks, we examine how individuals in a collectivist culture such as Chinese culture compared to an individualistic culture such as British culture perform when offered a competitive incentive for payment or a non-competitive incentive for payment (Finocchiaro Castro (2008); Chuah et al. (2007);

Zhang (2019))[3].

To identify the differences in performance under different payment schemes we focus on two groups: Chinese and British. The reason why we selected to study behaviour within British and Chinese nationals are threefold. First, China is known as a collectivist culture that is heavily influenced by communist beliefs and Buddhist philosophy. In a collectivist society, individuals belong to strongly linked groups (Cameron et al. (2015); Buchan and Croson (2004)). On the other hand, western societies such as Britain are individualistic cultures and are mostly influenced by capitalism. These societies are characterised by independence, where the connection between individuals are weak and everyone is expected to look after themselves (Tafarodi et al. (1999); Petrie and Merdenyan (2016)). Second, China is still a patriarchal society although it has been promoting gender equality for a long time (Carlsson et al., 2019). During the 1950s China went through drastic changes due to the communist reforms which led to long-lasting changes in education, work and general living habits (Hershatter, 2007). Third, Britain is an industrial and developed society with a population of 67 million and an annual per-capita GDP of about 40284.638 US Dollars (USD). While China, although industrialised, is considered more of a traditional society with a population of about 1.4 Billion and an annual per-capita GDP of about 10500.396 US Dollars (USD) (which is roughly 26% of that of the UK)[4]. Given the economic, political, and social differences between British and Chinese societies, focusing on these two groups, and comparing their decisions, provides a great understanding of how the two groups differ in their behaviour when they interact with others from their own group. The results from this study are also comparable to previous studies relating to both Chinese and British societies[5].

In this experiment, we find significant differences in piece rate and tournament performance. However, we do not find any differences in tournament entry between British and Chinese groups. We find that the Chinese subjects perform better in the competitive and non-competitive tasks. Although we do not find differences in piece rate and tournament performance among the men, we do find that Chinese women perform significantly better than British women in both competitive and non-competitive tasks. These results can be explained by Chinese subjects' educational practices and their greater importance for relationships (Cameron et al., 2015). The Chinese reforms have radically

[3]Croson and Buchan (1999) and Brandts et al. (2004) and Chuah et al. (2016) also study national groups such as China, Malaysia, Japan, Korea, US, UK, Netherlands and Spain and their offers in a trust game. These studies suggest that characteristics such as ethnic background and nationality can bring about different behaviours.

[4]Data from the world bank: https://data.worldbank.org/

[5]Bohnet et al. (2008), Herrmann et al. (2008), and Zhang (2019), focus on Chinese societies while Chuah et al. (2007), Finocchiaro Castro (2008), and Chuah et al. (2009), focus on British societies.

changed the lives of the people, specifically women in China. These reforms encouraged gender equality and have minimised the gender gap in math tasks. Also, subjects from the Chinese group reported that they feel closer to others in their group compared to British subjects and hence exerted more effort in the task. Regarding subjects' decision to enter a competition, we do not find differences between the British and the Chinese group. Our results are robust when we control for characteristics such as differences in ability, lack of confidence and level of risk aversion. We conclude that subjects from the Chinese culture perform better in competitive and non-competitive tasks compared to individuals in the British culture. We suggest that this is due to the feeling of closeness and the educational practices in a Chinese culture . However, their tournament entry decisions are similar which may be explained by their similar confidence level and risk aversion.

Our findings add to the current literature on tournament and piece rate performance and the gender gap in competition. We build on the work of Niederle and Vesterlund (2007) where they do not find differences in performance and suggest that women are less likely to put themselves in competitive environments compared to men. Our findings are closer to Carlsson et al. (2020) who investigates the gender differences in competitiveness among adult Han Chinese. They find that on average women perform equally well or better than men in both the non-competitive payment option and the competitive payment option. They also find that men are substantially more likely to choose to compete and this cannot be explained by differences in confidence or risk preferences. We, on the other hand, look at how cultural-based social closeness can affect piece rate and tournament performance. We find that, individuals from a collectivist group perform significantly better than those in an individualist group. We show that collectivist societies feel closer to others in their group and as a result perform better in incentivised tasks. We do not find a significant difference between British and Chinese individuals' willingness to compete.

By creating national groups, we also add to the literature on cultural differences in economic decision making. In their paper, Gneezy et al. (2009) show that women are less willing to compete in patriarchal societies compared to women in matrilineal societies. While (Andersen et al., 2013) suggest that this difference in competition is developed through socialization over time. In our paper, we also suggest that socialisation plays an important role in determining individuals' performance and competition. By comparing behaviour in the Chinese group and British group, we follow Tabellini (2010) and Zhang (2019) and suggest that due to institutional reforms and interventions in China women perform much better in mathematical tasks. These reforms have led to changes in social

norms and hence variations in the gender gap in competition (Booth et al., 2018).

This study also adds to the literature on group identity and social distance in willingness to compete. People identify better with others who have the same values and beliefs as them and they tend to favour them more often (Chen and Li (2009); Chen and Chen (2011)). We contribute to this line of study by examining performance and competition among individuals from two different groups and pairing people from the same group together. This may create a sense of group identity among the subjects. We show that subjects from a more collectivist culture, that feel close to each other, perform better in both competitive and non-competitive tasks compared to a more individualistic culture. This adds to studies examining the role of group identity and social distance (Kato and Shu (2016); Afridi et al. (2015); Cornaglia et al. (2019)).

The remainder of the paper is organised into 4 sections. We outline the experimental design, procedure, and treatments in section 2. In section 3 we outline our results, and we conclude our study with comments and remarks in section 5.

4.2 Experimental Design

Using experimental methods, we now investigate the role of cultural differences in individuals' willingness to compete, while focusing on two diverse groups: the British group and the Chinese group. We use three tasks to observe differences in performance and competition choices between the two groups.

Our design is similar to Niederle and Vesterlund (2007). At the start of the experiment, subjects are randomly matched into pairs with a random participant in the room. The pairs remain the same throughout the experiment and subjects make all their decisions about their paired participant. Subjects are then asked to take part in three different summation tasks with different payment schemes[6]. In all the tasks subjects are asked to add four randomly selected two-digit numbers and to complete as many of these summations as possible in three minutes.

Figure 4.1 presents the addition screen from the experiment. Subjects are asked to type their answer to the summation in a blue box on the screen and press submit. Once they press submit, a new set of random numbers will appear on the screen. If subjects did not know the answer to a summation, they were asked to press the submit button without putting anything as an answer and they would move on to the next problem. During the

[6]They make decisions in each payment scheme once.

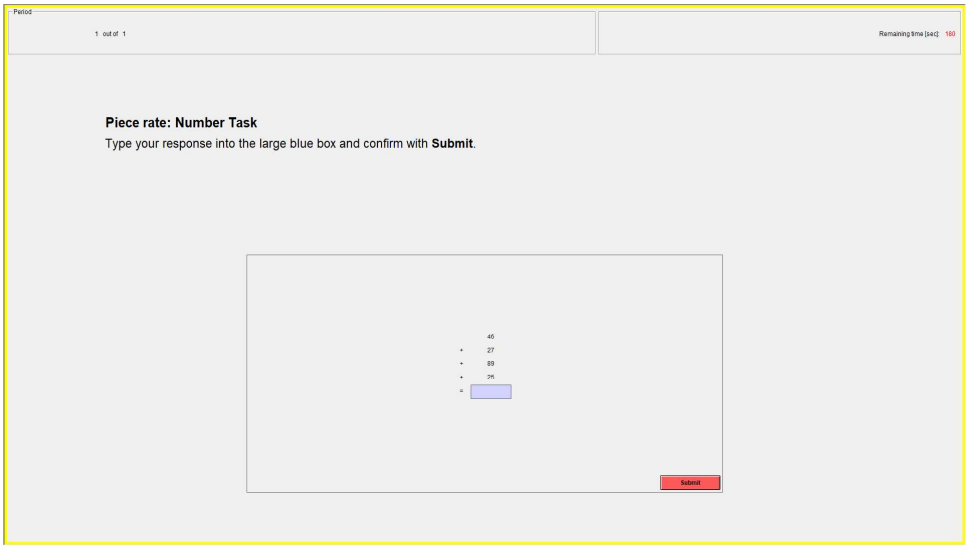


Figure 4.1: Summations Screen that participants see in all three tasks

experiment, all subjects were provided with paper and a pen but no other form of help. The tasks differed in their payment function. A description of the payment is provided with each task as presented below.

First task (Piece rate): In this task subjects are compensated based on their own performance. Subjects were offered three minutes to provide answers to as many summations as possible. They received £0.60 for each correct answer they provided and this did not affect their paired subjects' payoff[7]. Subjects did not lose or gain anything for empty or incorrect answers.

Second task (Tournament): In this task subjects were compensated relative to their paired partners' performance. Subjects were offered three minutes to provide answers to as many summations as possible. Each subject's payoff will depend on the number of correct answers they and their paired partner provides. If a subject provides more correct answers to the summations compared to their paired partner then they will receive £1.20 for each correctly solved problem[8]. The other subject in the pair will receive no payment. In case there is a tie between the paired subjects, the winner of

[7]Due to a programming error our piece rate compensation was either £0.60 or £0.50 in different sessions. As a result, the tournament compensation was also different in each session. For the tournament, the compensation was either £1.20 or £1.00. We ran a non-parametric test to see if there are any significant differences between the two samples. We do not find significant differences in the average number of correctly solved problems between the compensations in the piece rate task. You can find the results of these tests in Appendix.B.1.

[8]Given the programming error in the piece rate compensation, the tournament payoff was also different in different sessions. The tournament compensation was either £1.00 or £1.20. We do not find significant differences in the average number of correctly solved problems between the compensations in both the tournament task. You can find the results of these tests in Appendix.B.1.

the tournament will be selected randomly[9]. Subjects did not lose or gain anything for empty or incorrect answers.

Compensation choice: Before the start of the third task, subjects are asked to decide whether they would like to be compensated according to the piece rate payment scheme or the tournament payment scheme. If subjects choose the piece rate payment scheme, they will be paid based on their own performance regardless of their paired partners performance. On the other hand, if they choose the tournament payment scheme, they will be paid based on their own and their other partners' performance. Note that, subjects' compensation choice and performance during the final task will not affect their paired partners earnings. Subjects in this task selected between a competitive payment scheme and a fixed payment scheme, where, in the competitive payment scheme their payoff depends on their partners' performance in the tournament scheme. Hence, they compete with their partner only if they choose to enter the competitive task. This is a good representative of subjects' willingness to compete.

Third task (Piece rate vs. Tournament): In this task subjects were compensated relative to their choice of competitive or non-competitive task. Subjects were offered three minutes to perform a summation task and depending on their compensation choice, their payments were calculated. If subjects chose piece rate compensation scheme, they would receive £0.60 for each correct answer they provided[10]. If subjects chose the tournament compensation scheme, they would receive £1.20 for each correctly solved problem, given they answer more questions correctly compared to their paired partner in the tournament task[11]. If they do not provide more correct answers, they will receive no payments. In case there is a tie, subjects who selected the tournament in the final task will be winners with 50% chance. Subjects' compensation choice and performance during this task does not affect the earnings of their paired partner. If they choose the non-competitive task their earnings will depend on their performance and if they choose the competitive option, their earnings will depend on their performance and their partner's performance in the tournament task.

Rank Guess: Once subjects finish the third task they would receive feedback on their

[9]Given that the tournament is a winner take all task, we compare how the Chinese group and the British group perform when they have to compete with someone from their own group. This task offers a great opportunity to compare how two different groups with different characteristics compete with others from their own group.

[10]If in their session the piece rate compensation was £0.50, they would receive £0.50 for every problem they solve correctly.

[11]If in their session the piece rate compensation was £0.50, they would receive £1.00 for every problem they solve correctly, only if they solve more problems than their paired partner did in the tournament task.

own performance. They do not receive any information regarding their partner's performance. Subjects are then asked to guess their rank in the first task (Piece rate) and the second task (Tournament), within their pair. For each of the two tasks, subjects were asked to input either 1, meaning that they were the first in their pair or 2, meaning they were the second in their pair. They will receive an additional £0.50 for every correct guess they provide.

At the end of the experiment, one of the three tasks is randomly selected for payment. Subjects also responded to an extensive set of questions focusing on individuals' characteristics, personality traits, and political beliefs.

4.2.1 Treatments and Procedure

The experiment was programmed in z-Tree (Fischbacher, 2007) and conducted in the EXEC Laboratory at the University of York using Hroot (Bock et al., 2014) in November 2019. To observe the role of institutional changes we create a natural setting where we invite participants from two groups. The participants for this study followed two main requirements. First, they had to be students at the University of York and second, they had to carry either a Chinese or British nationality.

To observe the difference between these two groups, we conduct single nationality sessions with either Chinese nationals or British nationals. The British subjects were invited separately and were paired with each other in groups. The Chinese subjects were also invited separately and paired together in groups. We paired subjects from each nationality with another subject from the same nationality. This is essential for the experiment and it will show us if different groups with different cultural settings perform and compete differently with members of their own group.

We send out invitations highlighting that we are recruiting either only British or only Chinese nationals for this experiment and we ask all participants to bring with them their passports or any identifications showing their nationality. We wanted to only focus on participants who have been raised and educated in one of these countries. This was important for our experiment because we wanted to make sure participants have been exposed to the country's culture long enough.

Once subjects arrive at the lab, they were given instructions on how to proceed with the experiment. In total, we recruited 78 British subjects and 70 Chinese subjects. Out of the British subjects, 40 were men and 38 were women, while in the Chinese group,

15 were men and 55 were women[12]. The experiment lasted about 45 minutes and the average earnings excluding the showup fee of £2.50 was £6.87. At the end of each session, subjects were paid according to their total earnings.

4.2.2 Measuring Closeness

In this experiment, we also evaluate everyone's closeness to others in their respective cultural group. We use a measure known as the Inclusion of Others in the Self (IOS). This scale measures the strength in which subjects feel close to another person. The IOS scale was introduced by Aron et al. (1992) and is widely used to determine social relationships (Gachter et al. (2015); Gachter et al. (2019)). The IOS scale is based on self-perception of closeness, and it has two major advantages. First, it does not take in to account the determinants of a relationship and second, it is very simple to use. The IOS scale diagram is presented in Figure 4.2.

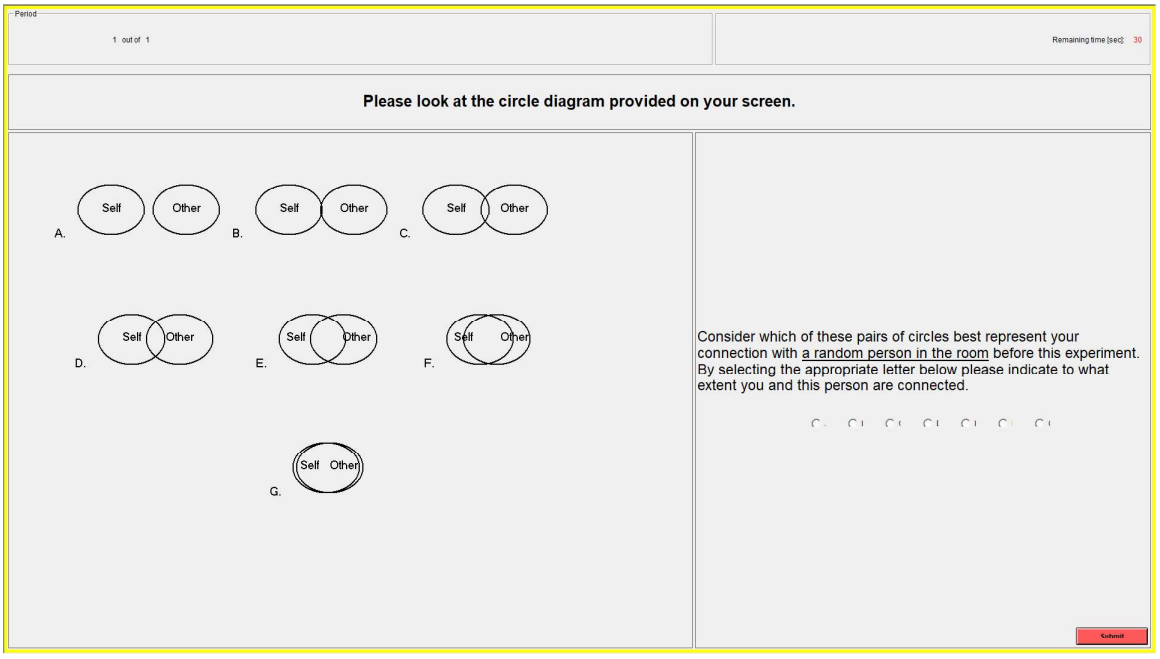


Figure 4.2: Inclusion of Others in the Self (IOS) scale

The IOS scale is a 7-point scale where the degree of overlap between the circles represents how close subjects feel to each other. With this measure, subjects are presented with 7 overlapping circles where one circle represents themselves and the other circle represents others. Depending on how much these two circles overlap subjects can indicate their

[12]We realised that our data was not balanced and we tried to recruit more subjects but we were unsuccessful in recruiting more Chinese men.

level of closeness. For example, if the circles are not connected and are distant from each other this represents that an individual feels completely distant from another. However, if the two circles are completely overlapped it represents that a subject feels completely close to others.

To observe the difference between cultures we conduct single nationality sessions with either Chinese nationals or British nationals. Within each session, we ask subjects to indicate how close they feel towards a random person in the room. In this case, subjects will have to indicate how close they feel towards a random person in the room who shares the same nationality as them.

The results from this measure will allow us to have a picture of closeness in a Chinese culture compared to British culture. We expect the subjects in the Chinese culture to feel closer to each other compared to those in the British culture.

4.2.3 Hypotheses

The following hypotheses address the impact of cultural differences on performance, both in piece rate and tournament, and their impact on the willingness to compete. The current literature on performance in competition focuses on the gender gap in various cultures and finds no significant differences in performance in piece rate or tournament tasks (Niederle and Vesterlund (2011); Balafoutas et al. (2012); Andersen et al. (2013); Siddique and Vlassopoulos (2020))[13]. Here we attempt to observe performance in piece rate and in the tournament, between British and Chinese cultures. Motivated by evidence on the effect of culture and performance in competition we introduce our hypothesis on subjects' performance.

Hypothesis I: *There is no difference between subjects' piece rate performance in the Chinese and British groups.*

Hypothesis II: *There is no difference between subjects' tournament performance in the Chinese and British groups.*

We now focus on cultural differences in willingness to enter the competition. The current literature suggests that different cultures enter competition differently. For example, in their leading study, Gneezy et al. (2009) argue that in patriarchal societies, women enter competition less than men while in matrilineal societies women are more competitive. This suggests that differences in culture can affect our willingness to enter a competitive

[13]Gneezy et al. (2003) and Vandegrift and Yavas (2009) find a significant gender gap in performance in tournaments and no gap in piece rate.

situation. In their paper Zhang (2019) show that institutional reforms during communism in China has affected the competitiveness of Han Chinese compared to a minority in China that were exempt from the institutional reforms. They find that these reforms increase the competitiveness of Han Chinese women compared to other minorities. Institutional reforms such as this induces variations in social norms, economic, and political beliefs, and this leads to a gender gap in willingness to compete (Andersen et al. (2013); Booth et al. (2018); Carlsson et al. (2020)). Given such evidence, we expect the Chinese nationals who have been influenced by institutional reforms, to enter the competition more than the British. We now present our hypothesis on subjects' willingness to compete.

Hypothesis III: *Chinese subjects are more willing to enter competition compared to British Subjects.*

4.3 Results

In this section, we first discuss the closeness between individuals within a group by looking at their reported inclusion of others in the self (IOS) measures. We then discuss whether British and Chinese groups differ in their piece rate and tournament performance. In the final part, we examine whether Chinese and British subjects differ in their preference for performing under piece rate and tournament.

4.3.1 Closeness

We now provide evidence on the interpersonal closeness between subjects within the British and Chinese groups. Here we report scores from subjects' IOS scale measure. As mentioned before, the IOS scale is recorded on a 7-point scale where 1 shows subjects feeling completely distant from each other and 7 meaning subjects feel completely close to each other.

Figure 4.3 presents the frequency in which subjects stated their level of closeness to a random person in the room. Given that, in each session, we only recruited subjects from one group, the score mentioned is how close a subject felt to a random person from their cultural group. Here we see that most of the subjects in the British group (39%) felt completely distant from others in their group. However, only 2% of the British subjects felt close to a random person in their group. Now we evaluate how close the Chinese subjects felt toward a random person in their group. We observe that fewer subjects in

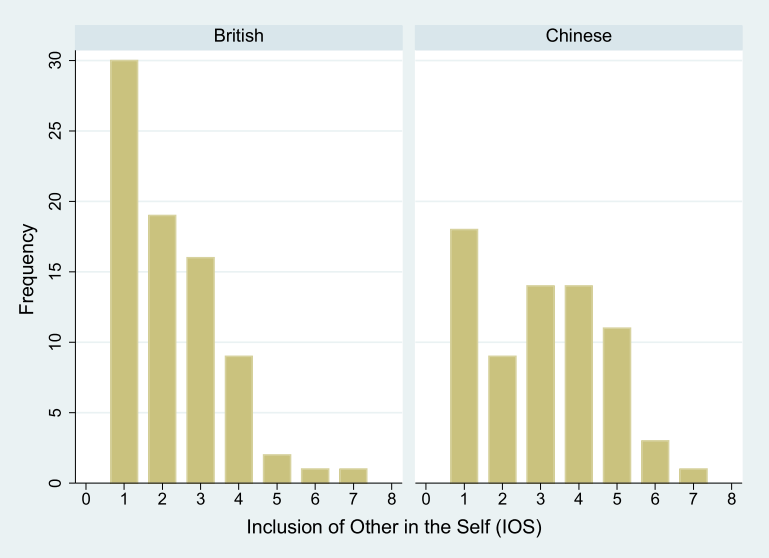


Figure 4.3: Distribution of British and Chines IOS scores

the Chinese group felt completely distant from others in their group. Only 26% of the Chinese subjects stated they feel completely distant, while around 5% felt completely close to the other person in their group.

Table 4.1: Average IOS scores by gender and cultural group

Group	Gender	Average IOS scale	Std. Dev.	Total
British	Female	2.26	1.13	40
British	Male	2.23	1.51	38
British	All	2.24	1.33	78
Chinese	Female	3.16	1.66	55
Chinese	Male	2.66	1.45	15
Chinese	All	3.06	1.62	70

Table 4.1 presents the average IOS scores for the Chinese and British groups. On average, the British subjects felt 2.24 close to a random person in their cultural group and the Chinese subjects felt 3.06 close to the random person in their culture group. Using a two-sample Wilcoxon rank-sum (Mann-Whitney) test we find a statistically significant difference between the British and Chinese groups' closeness to subjects in their respective cultural groups (3.06 vs. 2.24, $p < 0.01$). We can say that the average

closeness the Chinese feel for their cultural group is significantly higher than the average closeness the British feel for their cultural group. We are now looking at average IOS scores within a specific gender. We do not find British men and Chinese men to score their closeness to others in their respective cultural group differently (2.23 vs. 2.66, $p = 0.2054$). However, we find a statistically significant difference between the women IOS score in the Chinese group compared to the British group. We find that Chinese women feel closer to other Chinese subjects compared to how British women feel about other British subjects (2.26 vs. 3.16, $p < 0.01$). Looking at gender differences within a cultural group, we do not find a significant difference between British men's and British women's IOS scores (2.26 vs. 2.23, $p = 0.4782$). We also do not find a significant difference between Chinese men's and Chinese women's IOS scores (3.16 vs. 2.66, $p = 0.3353$). These results confirm that the Chinese overall feel closer to other Chinese compared to the closeness the British feel towards other British subjects and that this closeness is mainly driven by Chinese women.

Result 1: *Chinese subjects feel closer to other Chinese subjects compared to the British and how close they feel to other British subjects.*

Result 2: *Chinese women feel closer to other Chinese subjects compared to British women and how close they feel to other British subjects.*

4.3.2 Performance in the Piece Rate and the Tournament

In this section, we first examine British and Chinese subjects' performance, in the piece rate and tournament. In the piece rate task, subjects are asked to solve as many summation problems as possible and for every correct answer, they will be paid a fixed amount. In the tournament task subjects are asked to solve as many summation problems as possible and only the person with the most correctly solved problems in the pair will be paid. The person with the least correct answers in the pair will not receive a payment.

Table 4.2 presents the average performance in piece rate and tournament by gender and by groups. In the piece rate, the average problems solved is 7.36 for the British and 8.87 for the Chinese. Using a Two-sample Wilcoxon rank-sum (Mann-Whitney) test, we can see a significant difference between British and Chinese group average piece rate performance (Wilcoxon rank-sum test: 7.36 vs. 8.87, $p < 0.01$). We also observe a significant difference between British and Chinese women's piece rate performance (Wilcoxon rank-sum test: 6.00 vs. 8.56, $p < 0.01$), however, we do not find significant differences between British and Chinese men's performance in the piece rate (Wilcoxon rank-sum test: 8.65 vs. 10.00, $p = 0.1043$).

Table 4.2: Average Performance in Piece rate and Tournament tasks by gender and group

Group	Gender	Average Piece rate performance	Average Tournament performance	Total
British	Female	6.00	7.79	38
		(2.77)	(2.53)	
British	Male	8.65	9.90	40
		(4.09)	(4.21)	
British	All	7.36	8.87	78
		(3.73)	(3.63)	
Chinese	Female	8.56	10.43	55
		(3.11)	(3.65)	
Chinese	Male	10.00	11.46	15
		(2.98)	(3.16)	
Chinese	All	8.87	10.66	70
		(3.12)	(3.56)	

Notes: Standard deviations are presented in parentheses.

The average tournament performance shows that the British solve an average of 8.87 problems while the Chinese solve an average of 10.66 problems. We again use a Two-sample Wilcoxon rank-sum (Mann-Whitney) test and find that the Chinese group perform significantly better than the British group in the tournament (Wilcoxon rank-sum test: 8.87 vs. 10.66, $p < 0.01$). We also find significant differences between British and Chinese women's tournament performance (Wilcoxon rank-sum test: 7.79 vs. 10.43, $p < 0.01$). We also find weakly significant differences between British and Chinese men's performance in the tournament (Wilcoxon rank-sum (Mann-Whitney) test: 9.90 vs. 11.46, $p < 0.10$)[14].

We now look at performance differences between piece rate and tournament. Figure 4.4 presents the number of correctly solved problems in piece rate and tournament across treatment. On the horizontal axis, we have the number of correctly solved problems in piece rate and tournament. We have the British and Chinese groups on the vertical axis. At a first glance, we observe that both British and Chinese groups perform better in the tournament compared to the piece rate. The increase in performance from the piece rate

[14]In the British group, 47.50% of men and 52.63% of women won the tournament and in the Chinese group, 53.33% of men and 49.09% of women were the winners of the tournament task. We do not see a significant gender difference between tournament winners in both British and Chinese groups. For the British (Two-sample test of proportions: $p = 0.6505$) and for the Chinese (Two-sample test of proportions: $p = 0.7708$) group.

to the tournament may also differ by gender. British men vary more in their number of correctly solved responses compared to Chinese men who show less variation in their number of correctly solved responses. For British women, we observe less variation in the number of correctly solved problems compared to Chinese women.

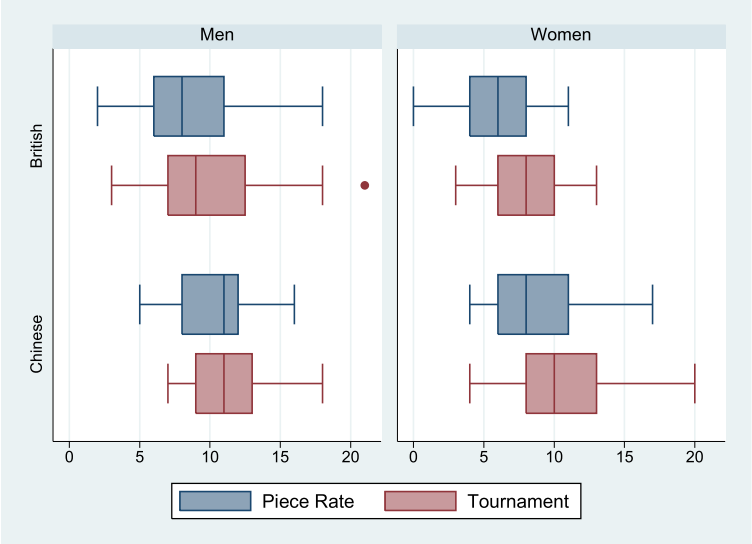


Figure 4.4: Number of Correctly Solved Problems in Piece Rate and Tournament

On average, the British solve 8.87 problems in the tournament which is an increase from the average of 7.36 problems in the piece rate (Wilcoxon signed-rank test: 7.36 vs. 8.87, $p < 0.01$). We also observe the same behaviour from the Chinese group where they increase their performance from an average of 8.87 in the piece rate to an average of 10.66 in the tournament (Wilcoxon signed-rank test: 8.87 vs. 10.66, $p < 0.01$). Our results show that the Chinese group have a better average performance in both the tournament and the piece rate compared to the British group. Looking at the difference in the number of correctly solved problems in the tournament compared to the piece rate, both British men (8.65 vs. 9.90; $p < 0.01$), Chinese men (10.00 vs. 11.46; $p < 0.01$), British women (6.00 vs. 7.79; $p < 0.01$) and Chinese women (8.56 vs. 10.43; $p < 0.01$) perform better in the tournament compared to the piece rate. Given that the performance in these tasks are highly correlated (Spearman rank correlations of 0.7742 ($p < 0.01$) for British and 0.7942 ($p < 0.01$) for Chinese), the increase in performance from piece rate to tournament for both cultural groups may be caused by learning or by the different performance incentives under the tournament (Niederle and Vesterlund, 2007).

The results from this section suggest that the Chinese group perform better in both piece rate and tournament compared to the British group. The Chinese group, not only

performs better in the piece rate task but also performs better in the tournament task. Although the increase in performance from the piece rate to the tournament task can be explained by competitive incentives the difference between British and Chinese subject's performance cannot be explained by incentives.

One explanation for our result can be the Chinese culture itself. Recent evidence show that the Chinese institutional reforms have radically changed the lives of women in China (Zhang, 2019). These reforms have encouraged gender equality and have increased the performance and productivity of women in China. Our results show that the difference in performance is driven mainly by Chinese women, meaning that it is Chinese women who perform better in the piece rate and tournament compared to British women. We do not find performance differences between Chinese and British men. Looking at the Chinese subject's interpersonal closeness to other Chinese subjects, we see that Chinese women feel closer to other Chinese subjects compared to British women and how close they feel to other British subjects. It is possible that, because Chinese women consider themselves no different from Chinese men, they feel closer to other Chinese subjects.

The difference between Chinese and British subjects' performance can also be explained by the gender gap in math tasks among Chinese nationals. Previous literature on performance in math tasks suggests that the gender gap in math disappears in more gender-equal societies (Guiso et al. (2008); Pope and Sydnor (2010))[15]. Given that China has been exposed to institutional reforms that enforced a more gender equal rules, Chinese women may be better prepared for these mathematical tasks (Zhang, 2019). Because of these gender equal rules, it is possible that the women in our sample have been exposed to more mathematical tasks and have been educated for these tasks, hence they are better than the British women in both the tournament and the piece rate[16].

Result 3: *Chinese subjects perform better in both piece rate and tournament compared to the British subjects.*

Result 4: *Chinese Women perform better than British Women in both piece rate and tournament tasks. We do not find a significant difference in piece rate and tournament performance for men.*

Knowing that all subjects first take part in piece rate and tournament tasks, we now look at participant willingness to enter the tournament.

[15]These results change when Muslim countries are included in the analysis. In spite of women's low status in these countries, there is little or no gender gap in math (Fryer and Levitt, 2010). Given that the British society is very diverse, and our student sample may be diverse in religion we also control for this in our study. We do not find religion to have a significant effect on subjects' performance

[16]Additional data analysis is presented in Appendix B.2.

4.3.3 Tournament entry

Once subjects experience piece rate and tournament payment schemes, they are asked to select, either to be paid with the piece rate scheme or the tournament scheme for the final round of the experiment. If a subject chooses the tournament as the final round payment method, they will win the tournament if they solve more problems correctly in their final task compared to their other group members in the tournament task. Selecting the tournament as the payment for the final round depends on both subjects' beliefs about their own ability and their other group members' performance in the tournament task.

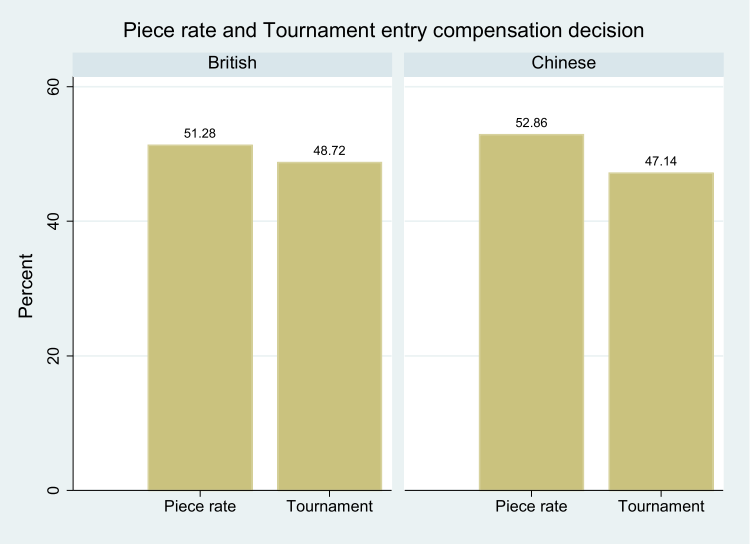


Figure 4.5: Piece Rate and Tournament entry

Figure 4.5 presents the number of subjects choosing to be paid with a competitive rate or a non-competitive rate. In this task, which is referred to as the compensation selection task, 48.72% of the British subjects and 47.14% of the Chinese subjects choose to enter the tournament. We do not find a significant difference between both British and Chinese groups' decision to enter the tournament (Pearson's chi-squared test: $p = 0.848$) [17]. We do not find significant variations between British men and Chinese men compensation selection decisions (62.50% vs. 60%, Pearson's chi-squared test: $pr = 0.865$) or a significant variations between British women and Chinese women compensation selection decisions (34.21% vs. 43.64%, Pearson's chi-squared test: $pr = 0.361$)[18]. We do not

[17]Two-sample Wilcoxon rank-sum (Mann-Whitney) test: $p = 0.8486$.

[18]British men's and Chinese men's compensation selection decision (Wilcoxon rank-sum test: $p = 0.8663$) and British women and Chinese women's compensation selection decision (Wilcoxon rank-sum test: $p = 0.3639$).

observe any cultural differences in subjects' compensation selection decisions, meaning that there is no significant difference between Chinese and British subjects' tournament entry decisions.

Looking at gender differences in tournament entry we find a significant difference between men and women. In this task, 61.82% of men choose to enter the tournament and this decreased to 39.78% for women. An analysis of gender differences within a group shows that, while 62.50% of British men enter the tournament, there are only 34.21% British women who choose the tournament scheme. The observed gender gap between the British group is statistically significant (Pearson's chi-squared test: $p < 0.05$) meaning that British women enter the tournament less than British men. For the Chinese group, 60.00% of the men and 43.64% of the women select to enter the tournament but the gap is not statistically significant (Pearson's chi-squared test: $p = 0.260$), suggesting that there is no gender difference in Chinese subjects tournament entry decisions [19].

Table 4.3: Probit Regression for Tournament entry - Marginal Effects.

Dependent variable: Tournament entry	Model(1) All Sample	Model(2) All Sample	Model(3) All Sample	Model(4) All Sample	Model(5) Male	Model(6) Female	Model(7) Male	Model(8) Female
Chinese	-0.0158	0.0551	-0.0250	0.0263	-0.0250	0.0943	0.0252	0.0509
	(0.0825)	(0.0842)	(0.147)	(0.138)	(0.149)	(0.103)	(0.135)	(0.0926)
Female		-0.238***	-0.281***	-0.192*				
		(0.0867)	(0.105)	(0.103)				
Chinese*Female			0.116	0.0262				
			(0.169)	(0.165)				
Difference between				-0.0347**			-0.0529**	-0.0222
Tournament and Piece rate				(0.0171)			(0.0267)	(0.0215)
Confidence				0.224***			0.258*	0.207**
				(0.0789)			(0.145)	(0.0937)
Risk Aversion				-0.104****			-0.0895***	-0.115****
				(0.0204)			(0.0298)	(0.0287)
N	148	148	148	148	55	93	55	93

Notes: This table presents Probit regression results with marginal effects reported in percentage points. Robust standard errors are presented in parentheses. The columns Model(1), Model(2), Model(3) and Model(4) consider the whole sample; whereas, Model(5), Model(6), Model(7) and Model(8) consider only the sample for Male and Female subjects respectively.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

To further explore the determinants of tournament entry decisions we run a Probit regression. In Table 4.3 we report results displaying average marginal effects and robust standard errors, where the dependant variable takes the value 1 if subjects select to enter the tournament and 0 if they select to enter the piece rate. As an independent variable, we include a Chinese dummy variable. If the subjects are from a Chinese group, the independent variable will take the value 1 and if they are from a British group, it will take the value 0. To observe the role of gender we include the Female dummy variable

[19] British men choose to enter tournaments more than British women (Wilcoxon rank-sum test: British men vs. British women $p < 0.05$). There is no difference between Chinese men's and women's tournament entry decisions (Wilcoxon rank-sum test: Chinese men vs. Chinese women $p = 0.263$).

which takes the value of 1 if the participant identified as a woman and 0 if they identified as men. We also add the interaction between Chinese and females to the regression.

In Model (1) we investigate cultural group variation within the whole sample. We do not find a significant difference between British and Chinese subjects' tournament entry decisions. Looking at Model (2) we do not observe a significant cultural difference. However, we do find a significant gender gap in subjects' tournament entry decisions. Women are 23 percentage points less likely to enter tournaments. This is in line with previous experimental literature (Niederle and Vesterlund, 2007). Although women are less likely to enter tournaments, we do not find the Chinese subject's tournament entry decisions to differ significantly from the British Subject. In Model (3) we also present the interaction terms. We do not find the coefficient for interaction between Chinese and females to be statistically significant. In Model (4) we also control for other factors that may affect an individual's tournament entry decisions. We include individuals' differences in performance, confidence, and risk aversion to the model.

We first control for differences in performance among British and Chinese groups in tournament entry. Individuals decide on their tournament entry decisions conditional on their performance. If subjects perform better in the tournament task relative to the piece rate task, they may be keen to enter the tournament. Here we control for difference in performance when we observe cultural differences in tournament entry. Our finding from Model (4) suggests that, for a given difference in performance, there is no cultural difference in tournament entry. Despite differences in Chinese and British subjects' performance we do not find a difference in their tournament entry decisions.

Next, we evaluate the role that confidence plays in determining an individual's tournament entry decisions. As mentioned previously, subject's tournament entry decision depends on subject's beliefs regarding their performance ability with regards to their paired partner, in the tournament and piece rate tasks. Here we examine if there is a difference in British and Chinese beliefs regarding their performance ability. After subjects receive feedback on their performance in their chosen task, they are asked to guess their performance rank, relative to the other members of their group. If a subject guessed their rank as 1 it meant that they believed they performed better than the other person in their group and if they ranked themselves 2 it meant they believed they performed worse than the other person in their group. They received an extra £0.50 for their correct guess. We define confidence as subjects guessed rank in the tournament, or in other words, the individuals who were confident enough in their ability and guessed that they were the best in their pair when taking part in the tournament task. Confidence is a binary variable that shows the subjects guessed rank in the tournament. If a

subject ranked themselves first in the tournament, then that subject is considered confident. This represents participants' level of confidence in their performance. If subjects guess their rank in the tournament task as the first in the group, then their confidence would take the value 1 and otherwise it will take the value 0. Subjects guess their rank in the tournament after they observe their performance in all tasks. In Models (4) we also add confidence to the regression. We find a positive and significant coefficient for the confidence variable but we do not observe tournament entry for Chinese compared to British to change for a given confidence level[20].

Finally, we assess the role of risk on an individual's tournament entry decisions. We use the general Holt and Laury (2002) risk attitude task to determine individuals' risk aversion. Once subjects guess their rank in both tournament and piece rate tasks, they are asked to make a choice between a risky and a safe option. In this task, subjects respond to 7 questions where they are asked to select between two options where one option is risky and the other is safe[21]. The safe options offer subjects a definitive 100% chance of a £3.00 payment, whereas the risky option offers them a higher payment with a 50% chance of payment. The risky payments range from £5.00 to £16.00. The options for the risk task becomes riskier, meaning that the amount paid with a 50% chance increases as subjects go to the next choice. Subjects are considered risk-loving if they switch from the safe option to the risky option earlier. This task has been used by a large number of studies to measure individual risk preferences (Dohmen and Falk (2011); Charness et al. (2012)). Subjects began the task by selecting either, the safe options or the risky option for each of the 7 lottery choices, knowing that one of these choices would be randomly selected at the end for payment. Subjects can choose either the safe or the risky option and they can switch between the options as they go through the choices. The earlier the subjects switch from the safe option to the risky option, the less risk-averse they are and the more risk loving[22]. Our results in Model (4) does not show any significant cultural differences when controlling for risk aversion[23].

[20]Additional data analysis is presented in Appendix B.3.

[21]A screen shot of the task is attached in Appendix.C.

[22]Subjects select a risky or a safe option for each of the 7 choice questions. If a subject switches from the safe option in question 1 to the risky option in question 2, then the dependant variable takes the value 1. If subjects switch from the safe option in question 2 to the risky option in question 3, then the dependant variable takes the value 2 and so on. This measure shows that the earlier subjects switch the more risk loving they are and the later they switch the more risk averse. The subjects who switch are referred to as the switchers. If subjects switch once we use that to measure their risk aversion. However, it is possible that subjects switch more than once when going through the risk aversion task questions, which we refer to as multiple switchers. Subjects who switch multiple times are probably subjects who either did not understand the task or they are indecisive about their choice. Controlling for switchers in the regression does not change the British and Chinese groups' tournament entry decisions. Results for his is presented in Table 4.8 in Appendix B.4.

[23]Given that the Chinese subjects are living in the UK it is possible that cultural integration is playing

We now separate our sample by gender and look at cultural differences within men and women individually. In Model (5) we only look at tournament entry decisions for British and Chinese men. We do not find a significant cultural difference in tournament entry between the British and Chinese men. In Model (6) we focus on the sample of women. We do not find a difference in British and Chinese women's tournament entry decisions. In Model (7) and Model (8), we control for the difference in performance, confidence, and risk aversion. We do not find the British and Chinese men and women to enter the tournament differently when controlling for these factors.

Result 5: *Chinese and British are equally willing to enter the tournament.*

Result 6: *Women are less likely to enter the tournament compared to men.*

Result 7: *Differences in performance, confidence and risk aversion do not determine British and Chinese subjects tournament entry decision.*

4.4 Conclusion

Culture plays an important role in shaping our beliefs, values, and norms. In this paper, we use experimental methods to understand if different groups with different cultural settings can affect individuals' performance and competitiveness. We manipulate cultural differences by inviting subjects to the lab from two socially, economically, and politically diverse nationalities: Chinese subjects and British subjects. The Chinese are known as a collectivist culture while the British are considered more individualistic. We examine how Chines and British subjects' performance in a competitive (Tournament) and a non-competitive (Piece rate) task differs, and we explain how this difference can be explained by different cultural backgrounds. After gaining experience in both tasks, we ask participants to select one of these schemes for their final task. We offer subjects the option to select, either to take part in a piece rate or a tournament task and we observe their tournament entry decisions.

The results of our experiment shed light on the differences in performance, and willingness to compete, among British and Chinese subjects. We find significant performance differences between the British and the Chinese in both the piece rate task and the tournament task. We find that the Chinese subjects perform significantly better than the British subjects. Although we do not find differences in performance among men, we do find that Chinese women perform significantly better than British women. We explain

a role in subjects' willingness to compete (Cameron et al., 2015).

that the difference in performance may be due to the Chinese interpersonal closeness to other Chinese in the group. We discuss that since Chinese women feel closer to other Chinese, they perform better. We also, explain that the difference in performance may be because of Chinese women's better ability in mathematical tasks (Guiso et al. (2008); Pope and Sydnor (2010)). Given the Chinese exposure to more gender equal rules, the gender gap in mathematical tasks has been minimised between these subjects, however, the gender gap still exists among the British subjects. Looking at the willingness to enter a competition, we do not find a difference between the British and Chinese subjects. Our results are robust when controlling for differences in performance, confidence, and risk aversion.

The results from previous literature suggest that socialization in different cultures or societies can effectively change our willingness to compete (Gneezy et al. (2003); Andersen et al. (2013)). They also show that these differences can lead to gender differences in competition (see the literature following Niederle and Vesterlund (2007); Zhang (2019); Booth et al. (2018)). Our results provide different evidence compared to the existing literature on competitiveness. In this chapter, we show that the British and Chinese societies do not differ in their willingness to compete. We discuss that although institutional reforms increase the performance of women in the Chinese society compared to the British, they do not affect their willingness to enter a competitive situation. Our result provides an exception in the literature, suggesting that although different group characteristics can affect performance and even competitiveness, they do not make a difference across the British and the Chinese society[24].

One main shortcoming of our research is that it lacks individual information on cultural identity and social beliefs. Having more information on individuals' mathematical ability and previous education would shed more light on the difference in performance we observe in this study. Also, adding a third treatment, where we pair British and Chinese subjects together and observing their competitiveness may provide a better understanding of the role that groups plays in performance and competition. Collecting more information on cultural integration, being part of a minority group, individual characteristics and beliefs may also shed light on some of the behavioural outcomes that we observe in this study. Our research also opens new avenues for further research of cultural perception on the competition.

[24]In Appendix B.5. We present results showing that there is no gender difference in performance in the Chinese group but in the British group we find women to be less willing to enter the competition. We also find performance differences between genders in the British group but not the Chinese group.

4.5 Appendix

4.5.1 Appendix A. Experimental Material

Appendix A contains the invitation letters sent to the subjects (Appendix A.1) and the general instructions used in the experiment (Appendix A.2). Differences across treatments are indicated in square brackets.

A.1 Invitation letters

[Invitation Letter]

[Invitation letter for Chinese subjects and British subjects]

Dear #firstname #lastname

We are running an experiment this week.

We need 25 participants in our session. If we have more, the first 25 who arrive will participate, and any more who arrive in time will be paid the £2.50 show-up fee. There is a participation fee of £2.50 which will be added to whatever you earn in the experiment. [For Chinese Subjects: Note that in this experiment only Chinese participants are allowed to participate. For British Subjects: Note that in this experiment only British participants are allowed to participate.]

You can sign up for one of the following sessions:

#sessions

Each session will last for one hour and fifteen minutes. Please do not book for a session if you are not sure that you can attend. If you book and do not show up without warning us in advance, you will not get invitations to experiments in the future.

If you want to participate in one of the sessions, you can register by clicking on the following #link. If no sessions show up when you click the link it means that all sessions are full.

The EXEC Laboratory is located in what is called the Computer Training Room/EXEC Laboratory in the ARRC Building in Alcuin. A map can be found at:

https://www.york.ac.uk/economics/exec/find-us/

Please make sure that you arrive at the laboratory a few minutes before the start time of the session. If you turn up before the start time but are not needed, we will pay you £2.50.

What you will earn in the experiment depends on your decisions. Your payment will be given immediately after the session has finished. You will be asked to sign a receipt and then you will be free to leave.

If you have any questions, please feel free to contact us at michalis.drouvelis@york.ac.uk.

We look forward to your participation.

Michalis Drouvelis

A.2 Instructions

Instructions

General Instructions

Welcome! You are about to take part in a decision-making experiment. This experiment has been financed by various research institutions. Just for showing up you have already earned £2.50. You can earn additional money depending on the decisions made by you and other participants. It is therefore very important that you read these instructions with care.

It is important that you remain silent and do not look at other people's work. If you have any questions, or need assistance of any kind, please raise your hand and an experimenter will come to you. You may use the provided scrap paper but no phones, calculators, or other devices. If you use a device, talk, laugh, exclaim out loud, etc., you will be asked to leave and you will not be paid. We expect and appreciate your following of these rules.

We would like to stress that any choices you make in this experiment are entirely anonymous. Please do not touch the computer or its mouse until you are instructed to do so. If you have any questions at any point, please raise your hand and one of us will come to your desk to answer your question. Please do not ask any question out loud. Thank you.

During the experiment, participants will be divided into groups of two. You will therefore be in a group with one other participant. **You will remain paired with the same participant until the end of the experiment.** At no point during the experiment, nor afterwards will you be informed about the identity of the other participant in your group and the other participant will never be informed about your identity.

Detailed Information about the Experiment

You will be given 3 minutes to perform the following task during three separate rounds. The task consists of calculating the sum of four randomly chosen two-digit numbers like the following examples:

$21 + 35 + 48 + 29 = 133.$ $10 + 72 + 15 + 44 = 141.$

You cannot use a calculator to determine these sums; however, you can make use of the provided paper in your desk in order to do the necessary calculations. You must submit your answer by pressing the 'Submit' button. As soon as you have submitted

your answer, a new set of two-digit numbers will be provided. You can choose not to answer a question by clicking the 'Submit' button without typing anything as an answer. In this case, you will be moved to the next problem. To help with time management, there will be a clock counting down the seconds for the 3 minute duration.

Payment

The method we use to determine your earnings will vary across rounds. Before each round we will describe in detail how your payment will be determined. Only one of the three rounds will determine your payment for the experiment and it will be randomly chosen at the end. Each round is equally likely to be selected. At the end of the experiment you will be paid in private and in cash depending on the outcomes of the randomly selected round.

4.5.2 Appendix B. Additional data analysis

In this section we provide additional regression results for this paper.

B.1. Differences between samples with 0.5 piece rate and 0.6 piece rate-non-parametric test.

Table 4.4: Differences between samples with 0.5 piece rate and 0.6 piece rate-non-parametric test.

	0.5 Piece rate	0.6 Piece rate	Mann-Whitney test P-Value
Piece rate performance	8.2	7.96	p=0.9985
	(3.93)	(3.15)	
Tournament performance	9.9	9.55	p=0.6159
	(3.73)	(3.68)	
Tournament entry	0.43	0.53	p=0.2395
	(0.50)	(0.50)	
Piece rate vs. Tournament performance	11.06	10.28	p=0.2609
	(3.77)	(3.60)	
Confidence	0.74	0.60	p=0.0711
	(0.44)	(0.49)	
Risk aversion	3.23	3.13	p=0.7561
	(1.69)	(1.54)	

Notes: Standard deviations are presented in parentheses.

B.2. Performance in Piece rate and Tournament - Additional regression results.

Table 4.5: Performance in Piece Rate - regression results.

Dependent variable: Performance in Piece Rate	Model(1) All Sample	Model(2) All Sample	Model(3) Male	Model(4) Female
Chinese	1.512***	2.167****	1.350	2.564****
	(0.564)	(0.528)	(0.998)	(0.615)
Female		-2.193****		
		(0.591)		
Constant	7.359****	8.427****	8.650****	6****
	(0.423)	(0.558)	(0.651)	(0.448)
N	148	148	55	93

Notes: OLS estimates. Robust standard errors are presented in parentheses. The columns Model(1) and Model(2) consider the whole sample; whereas, Model(3) and Model(4) consider only the sample for Male and Female subjects respectively.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table 4.6: Performance in Tournament - regression results.

Dependent variable: Performance in Tournament	Model(1) All Sample	Model(2) All Sample	Model(3) Male	Model(4) Female
Chinese	1.785***	2.294****	1.567	2.647****
	(0.591)	(0.551)	(1.045)	(0.641)
Female		-1.703***		
		(0.604)		
Constant	8.872****	9.702****	9.900****	7.789****
	(0.411)	(0.575)	(0.670)	(0.409)
N	148	148	55	93

Notes: OLS estimates. Robust standard errors are presented in parentheses. The columns Model(1) and Model(2) consider the whole sample; whereas, Model(3) and Model(4) consider only the sample for Male and Female subjects respectively.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.3. Confidence - Additional regression results

Table 4.7: Confidence (Guessed tournament rank) - Marginal Effects.

Dependent variable: Confidence	Model(1) All Sample	Model(2) All Sample	Model(3) All Sample	Model(4) Male	Model(5) Female
Chinese	-0.0493	-0.0156	-0.0219	-0.120	0.0275
	(0.0773)	(0.0816)	(0.0798)	(0.120)	(0.101)
Female		-0.119	-0.141*		
		(0.0843)	(0.0818)		
Difference between			0.0413**	0.0550**	0.0338
Tournament and Piece rate			(0.0179)	(0.0249)	(0.0245)
N	148	148	148	55	93

Notes: This table presents Probit regression results with marginal effects reported in percentage points. Robust standard errors are presented in parentheses. The columns Model(1), Model(2) and Model(3) consider the whole sample; whereas, Model(4) and Model(5) consider only the sample for Male and Female subjects respectively.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.4. Risk Aversion - Additional regression results

Table 4.8: Difference in Risk aversion when controlling for single and multiple switchers-regression results.

Dependent variable: Risk aversion	Model(1) All Sample	Model(2) All Sample	Model(3) All Sample	Model(4) Men	Model(5) Women
Chinese	-0.0816	-0.0869	-0.0889	0.452	-0.239
	(0.269)	(0.273)	(0.272)	(0.411)	(0.346)
Female		0.0180	-0.0257		
		(0.273)	(0.279)		
Difference between Tournament and Piece rate			0.0915	0.0641	0.0597
			(0.0614)	(0.0778)	(0.0778)
Switched Once	-1.010	-1.009	-1.058	-2.894**	-0.0774
	(0.943)	(0.946)	(0.928)	(1.343)	(1.182)
Switched Multiple	-0.272	-0.272	-0.384	-1.819	0.445
	(0.963)	(0.967)	(0.948)	(1.342)	(1.184)
Constant	4.029****	4.019****	3.950****	5.472****	3.211***
	(0.928)	(0.939)	(0.923)	(1.351)	(1.184)
N	148	148	148	55	93

Notes: OLS estimates. Robust standard errors are presented in parentheses. The columns Model(1) and Model(2) consider the whole sample; whereas, Model(3) and Model(4) consider only the sample for Male and Female subjects respectively.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table 4.9: Probit Regression for Tournament entry - Marginal Effects.

Dependent variable: Tournament entry	Model(1) All Sample	Model(2) All Sample	Model(3) All Sample	Model(4) All Sample	Model(5) Male	Model(6) Female
Chinese	-0.00853	0.0489	-0.00110	0.0157	-0.00430	0.0710
	(0.0765)	(0.0782)	(0.140)	(0.141)	(0.138)	(0.0951)
Female		-0.213**	-0.241**	-0.239**		
		(0.0832)	(0.103)	(0.102)		
Chinese*Female			0.0739	0.0683		
			(0.163)	(0.165)		
Difference between	-0.0305*	-0.0249	-0.0249	-0.0217	-0.0418	-0.0139
Tournament and Piece rate	(0.0177)	(0.0174)	(0.0174)	(0.0173)	(0.0279)	(0.0219)
Risk Aversion	-0.105****	-0.102****	-0.102****	-0.102****	-0.0845***	-0.114****
	(0.0231)	(0.0224)	(0.0223)	(0.0227)	(0.0314)	(0.0318)
Switched Once				-0.114		
				(0.163)		
Switched Multiple				-0.199		
				(0.186)		
N	148	148	148	148	55	93

Notes: This table presents Probit regression results with marginal effects reported in percentage points. Robust standard errors are presented in parentheses. The columns Model(1), Model(2), Model(3) and Model(4) consider the whole sample; whereas, Model(5) and Model(6) consider only the sample for Male and Female subjects respectively. * $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

B.5. Gender gap in competition within British and Chinese group - Additional regression results

Table 4.10: Performance in Piece Rate and Tournament - regression results.

Dependent variable:	Performance in Piece Rate	Performance in Piece Rate	Performance in Tournament	Performance in Tournament
	Model(1) British	Model(2) Chinese	Model(3) British	Model(4) Chinese
Female	-2.650***	-1.436	-2.111***	-1.030
	(0.788)	(0.863)	(0.782)	(0.941)
Constant	8.650****	10****	9.900****	11.47****
	(0.647)	(0.753)	(0.666)	(0.800)
N	78	70	78	70

Notes: OLS estimates. Robust standard errors are presented in parentheses. The columns Model(1) and Model(2) consider the whole sample; whereas, Model(3) and Model(4) consider only the sample for Male and Female subjects respectively.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table 4.11: Tournament entry - regression results.

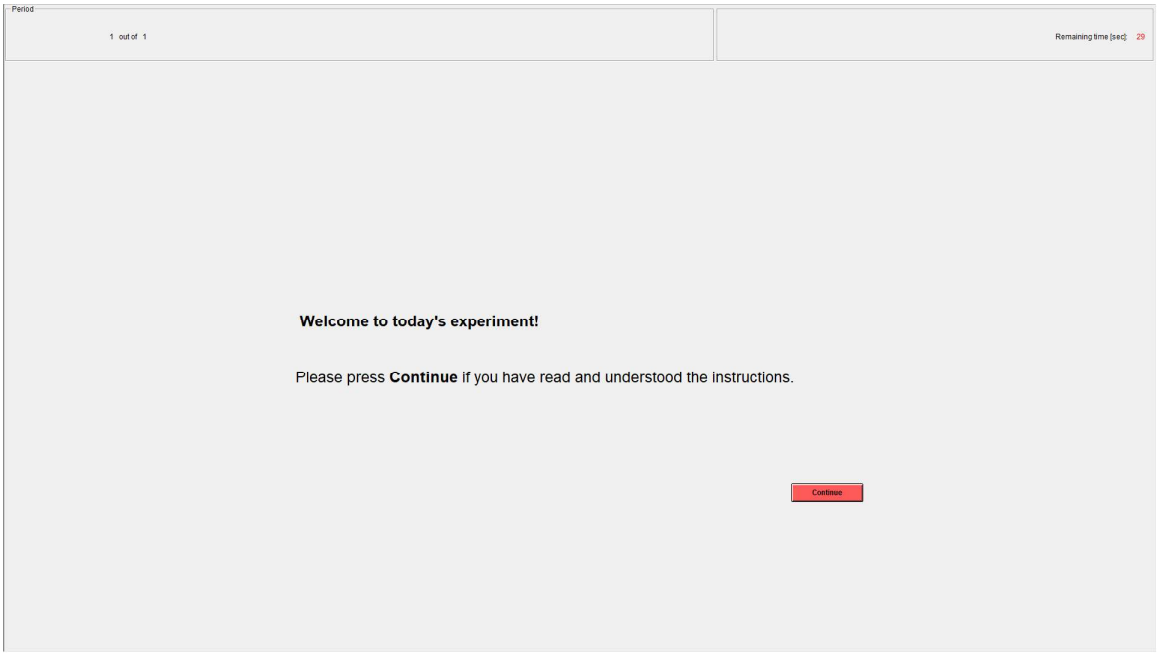
Dependent variable: Tournament entry	Model(1) British	Model(2) Chinese	Model(3) British	Model(4) Chinese
Female	-0.283***	-0.164	-0.184*	-0.192
	(0.109)	(0.144)	(0.105)	(0.130)
Difference between Tournament and Piece rate			-0.0657***	0.00651
			(0.0216)	(0.0243)
Confidence			0.214*	0.219*
			(0.110)	(0.113)
Risk Aversion			-0.0799***	-0.141****
			(0.0266)	(0.0273)
N	78	70	78	70

Notes: This table presents Probit regression results with marginal effects reported in percentage points. Robust standard errors are presented in parentheses. The columns Model(1) and Model(2) consider the whole sample; whereas, Model(3) and Model(4) consider only the sample for Male and Female subjects respectively.
* $p < 0.10$ ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

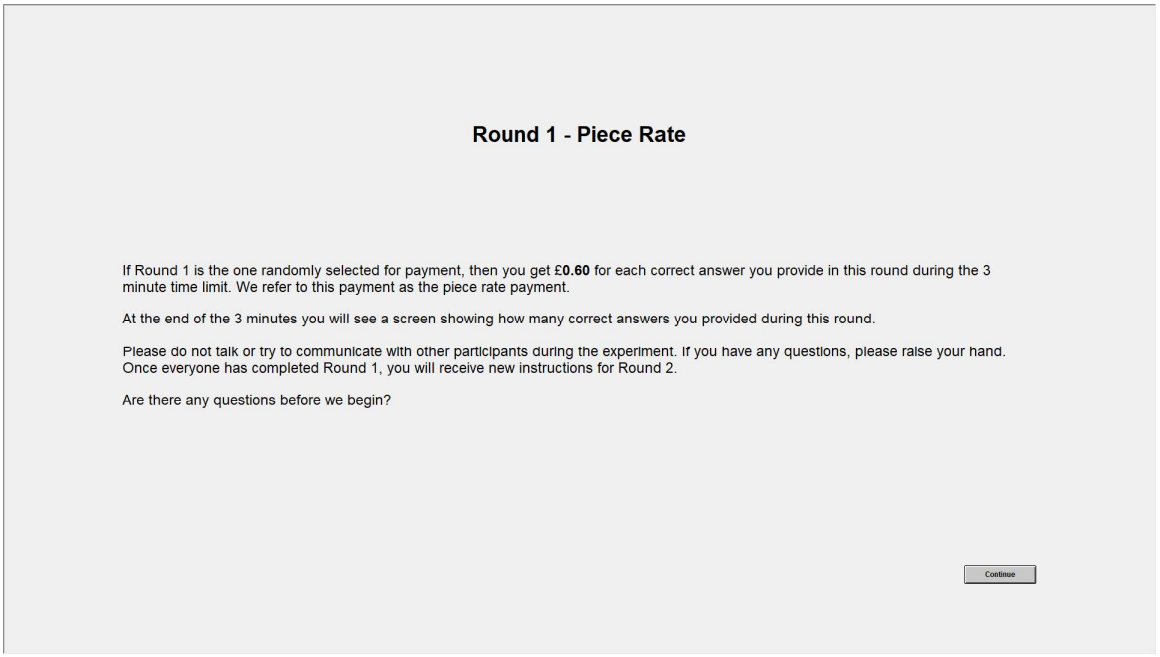
4.5.3 Appendix C. Screen shots

In this section we provide screen shots from our experiment.

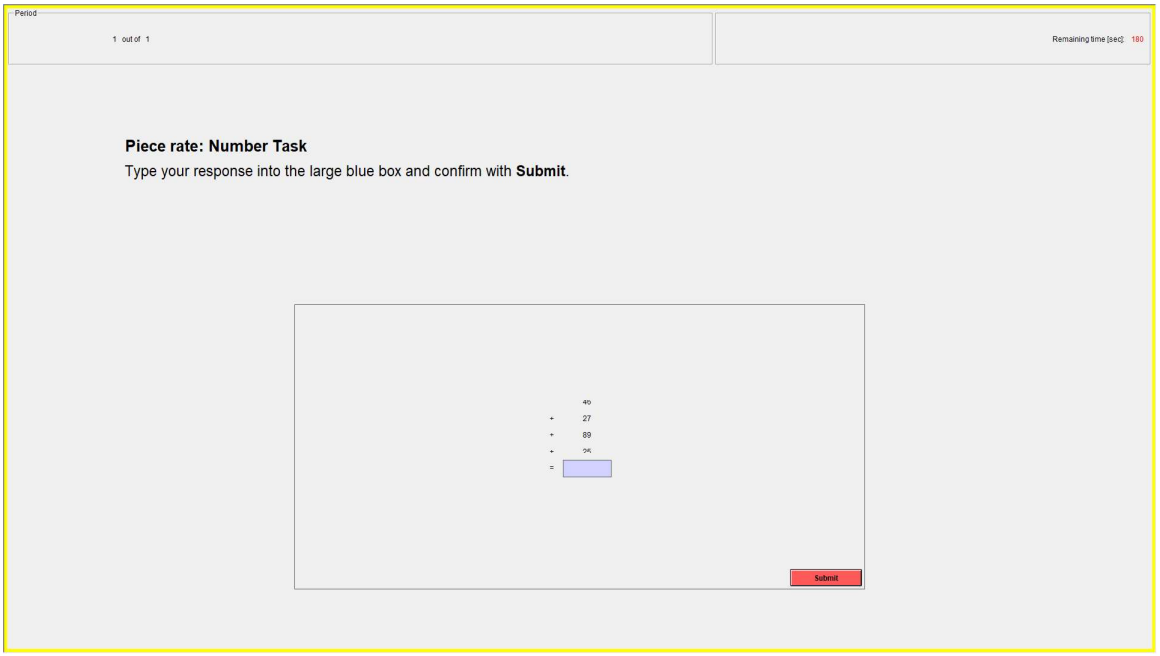
Welcome Screen



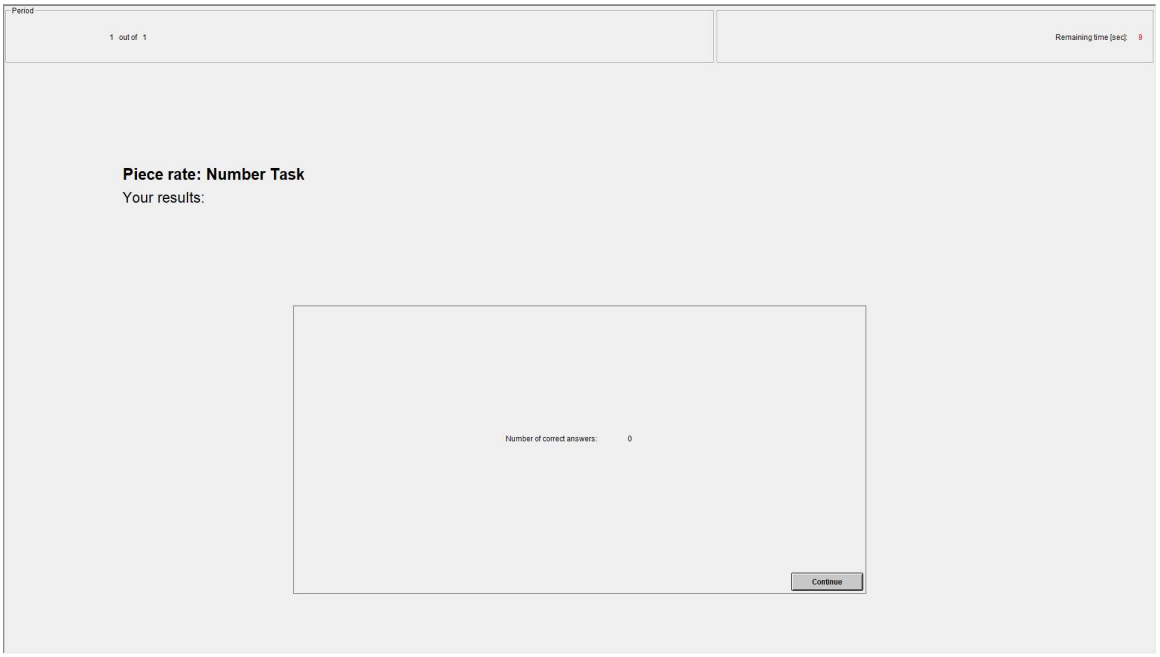
Introduction - Piece rate



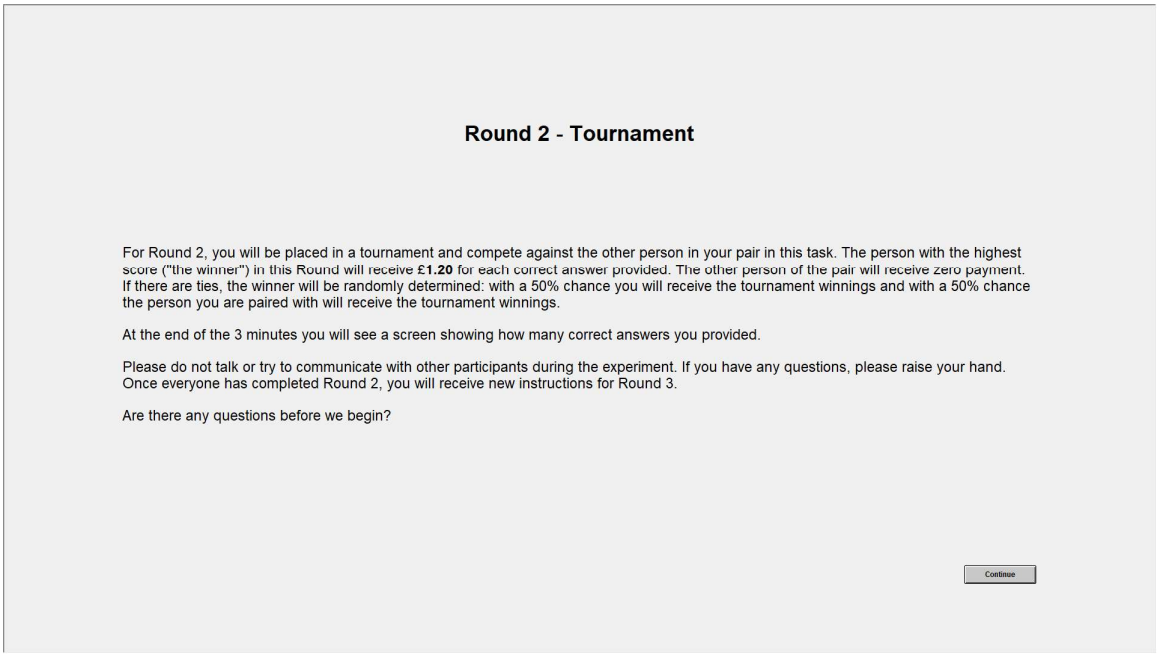
Piece rate task



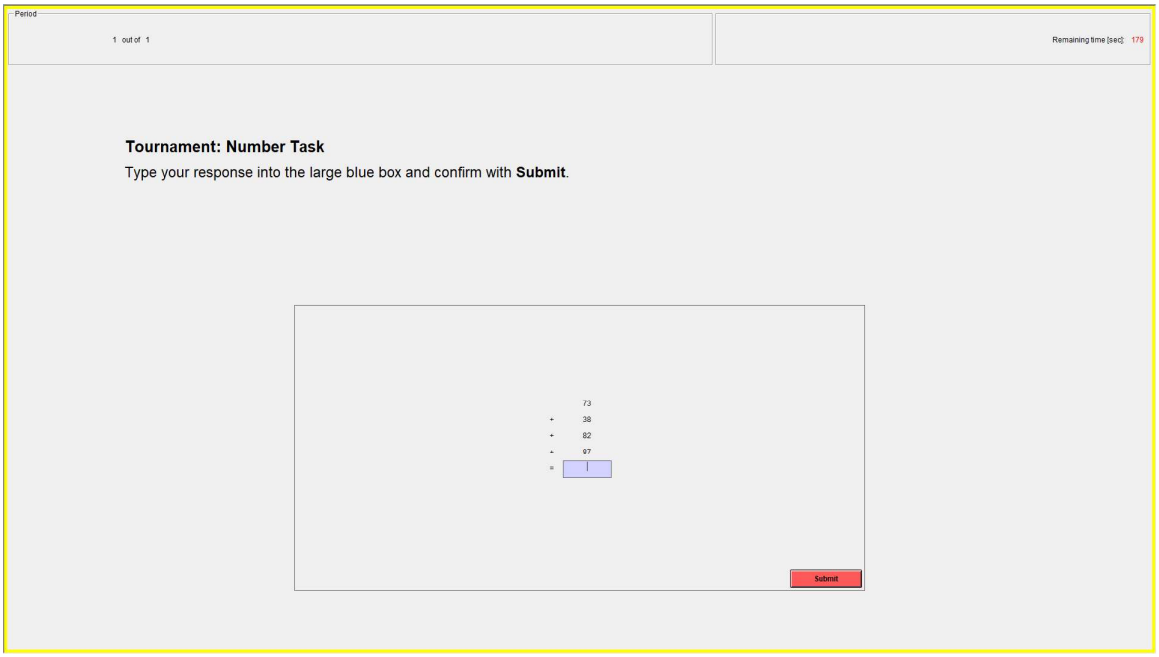
Piece rate result



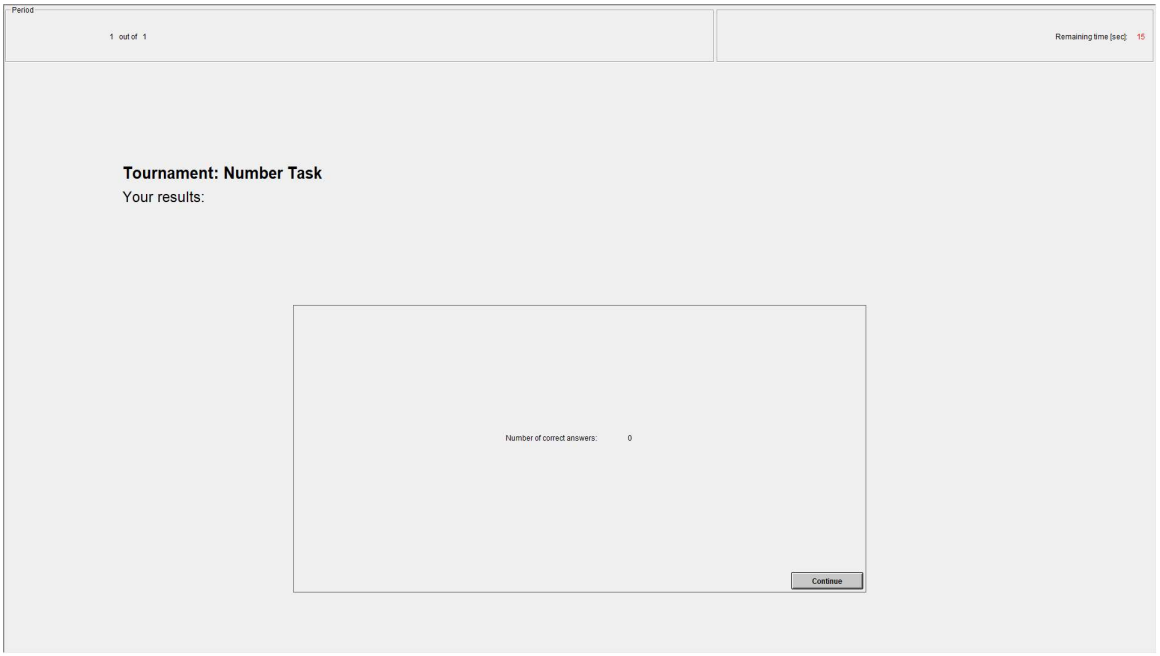
Introduction - Tournament



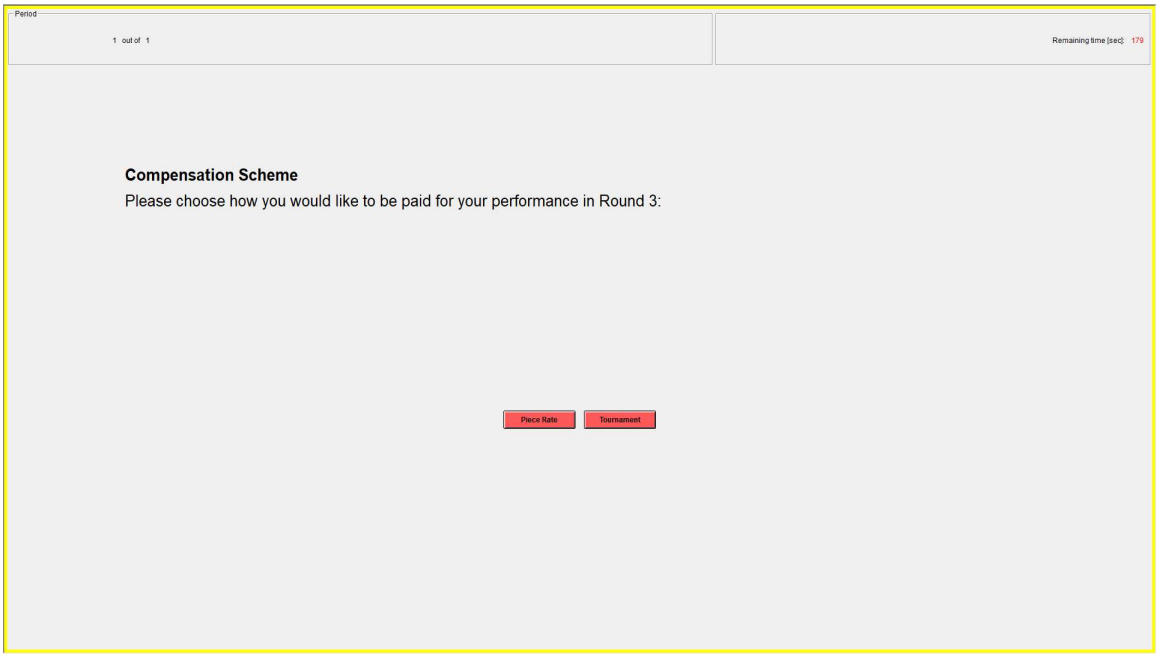
Tournament task



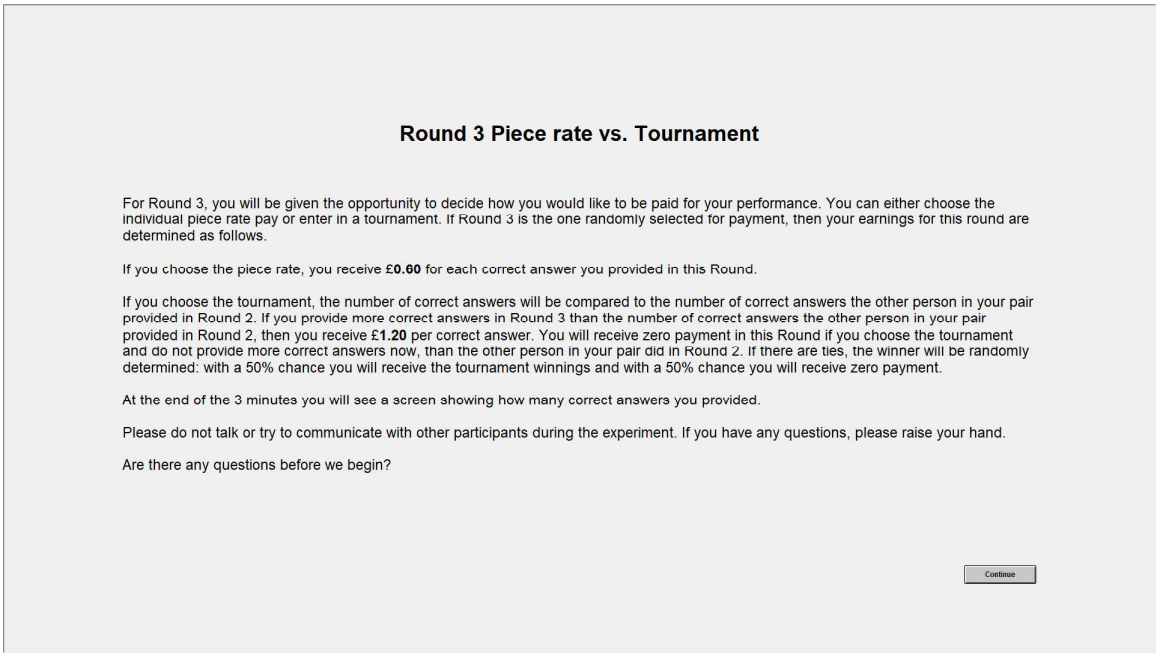
Tournament result



Compensation task



Introduction - Piece rate vs. Tournament



Round 3 Piece rate vs. Tournament

For Round 3, you will be given the opportunity to decide how you would like to be paid for your performance. You can either choose the individual piece rate pay or enter in a tournament. If Round 3 is the one randomly selected for payment, then your earnings for this round are determined as follows.

If you choose the piece rate, you receive **£0.60** for each correct answer you provided in this Round.

If you choose the tournament, the number of correct answers will be compared to the number of correct answers the other person in your pair provided in Round 2. If you provide more correct answers in Round 3 than the number of correct answers the other person in your pair provided in Round 2, then you receive **£1.20** per correct answer. You will receive zero payment in this Round if you choose the tournament and do not provide more correct answers now, than the other person in your pair did in Round 2. If there are ties, the winner will be randomly determined: with a 50% chance you will receive the tournament winnings and with a 50% chance you will receive zero payment.

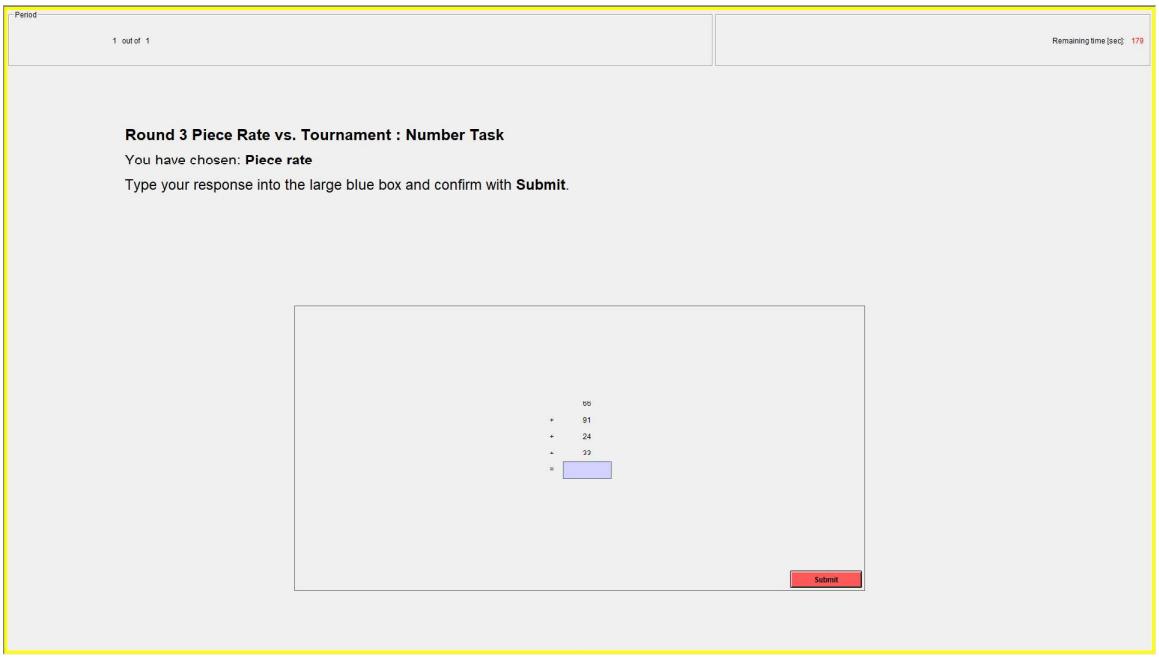
At the end of the 3 minutes you will see a screen showing how many correct answers you provided.

Please do not talk or try to communicate with other participants during the experiment. If you have any questions, please raise your hand.

Are there any questions before we begin?

Continue

Piece rate vs. Tournament task (Piece rate)



Period

1 out of 1

Remaining time [sec]: 179

Round 3 Piece Rate vs. Tournament : Number Task

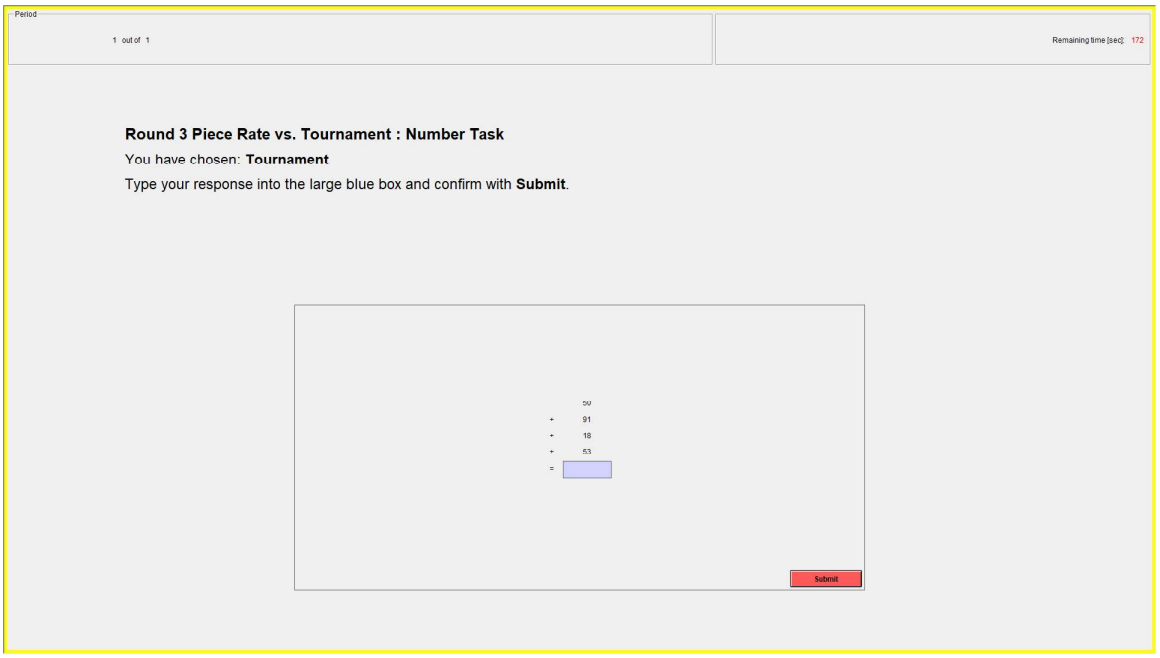
You have chosen: **Piece rate**

Type your response into the large blue box and confirm with **Submit**.

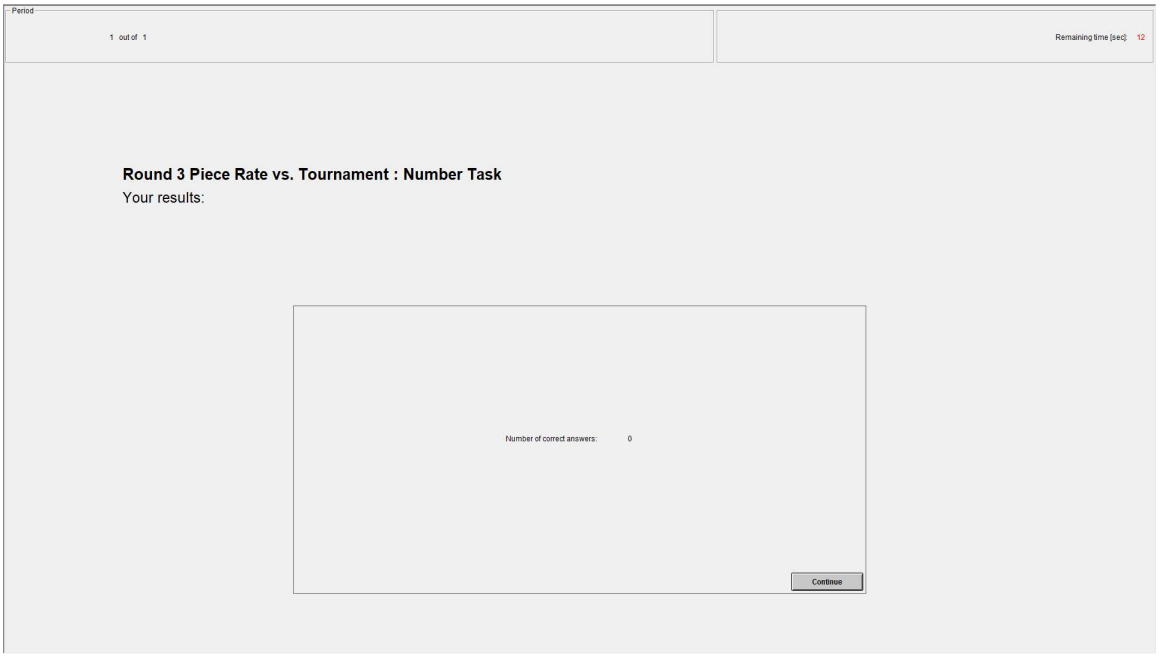
66
\+ 91
\+ 24
\+ 22
=

Submit

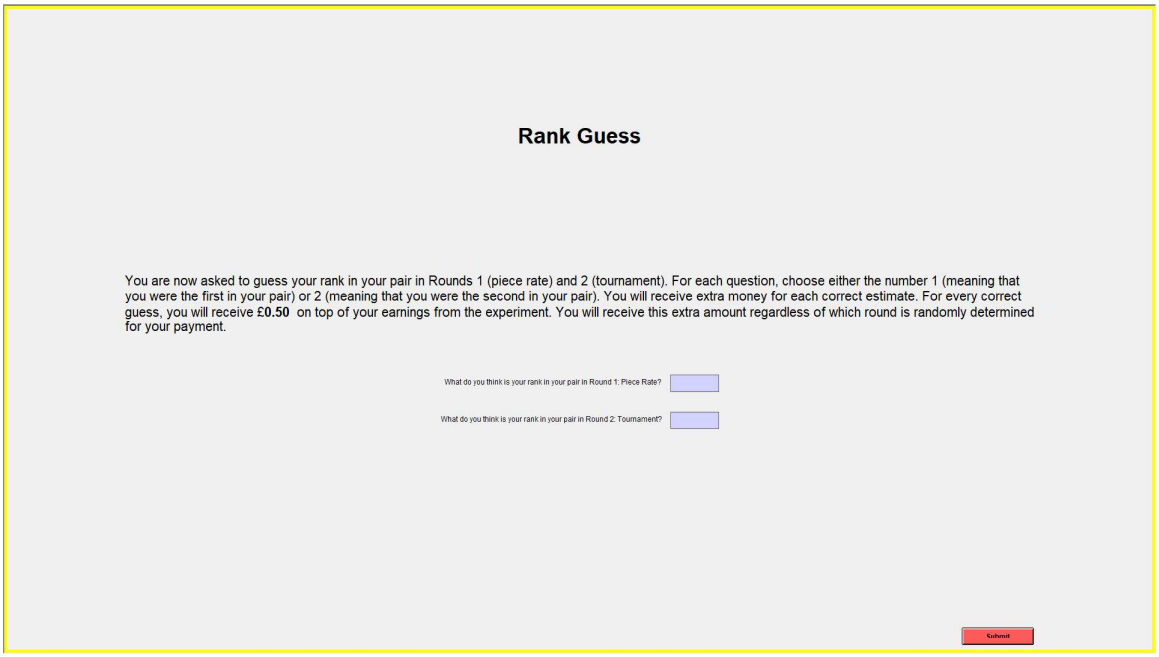
Piece rate vs. Tournament task (Tournament)



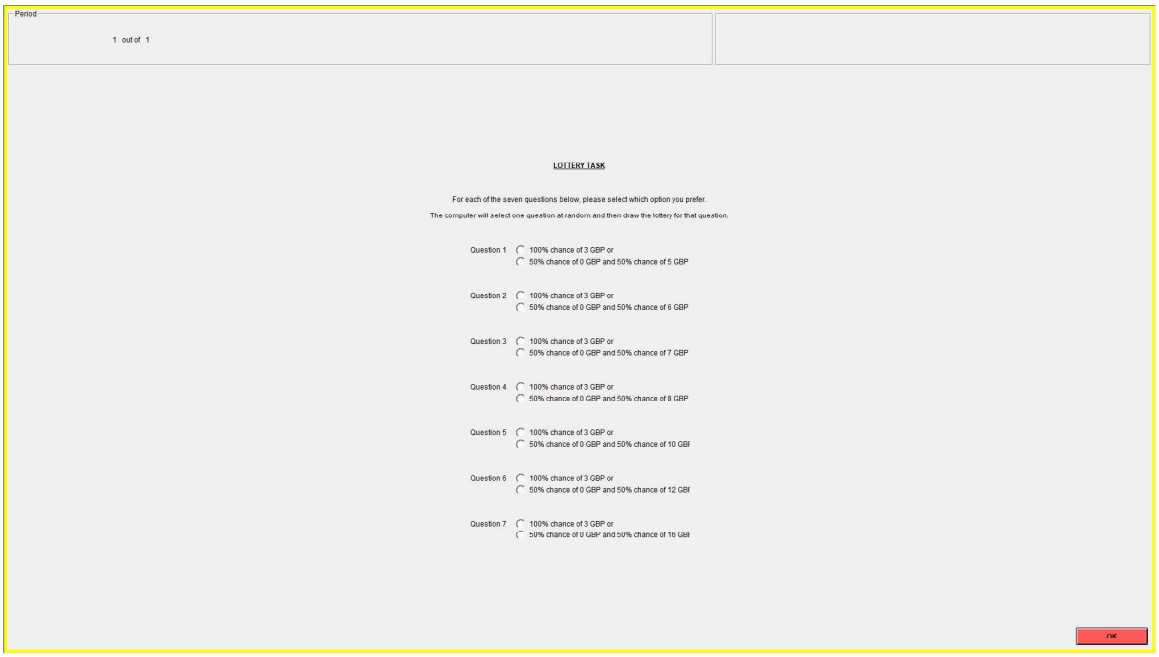
Piece rate vs. Tournament result



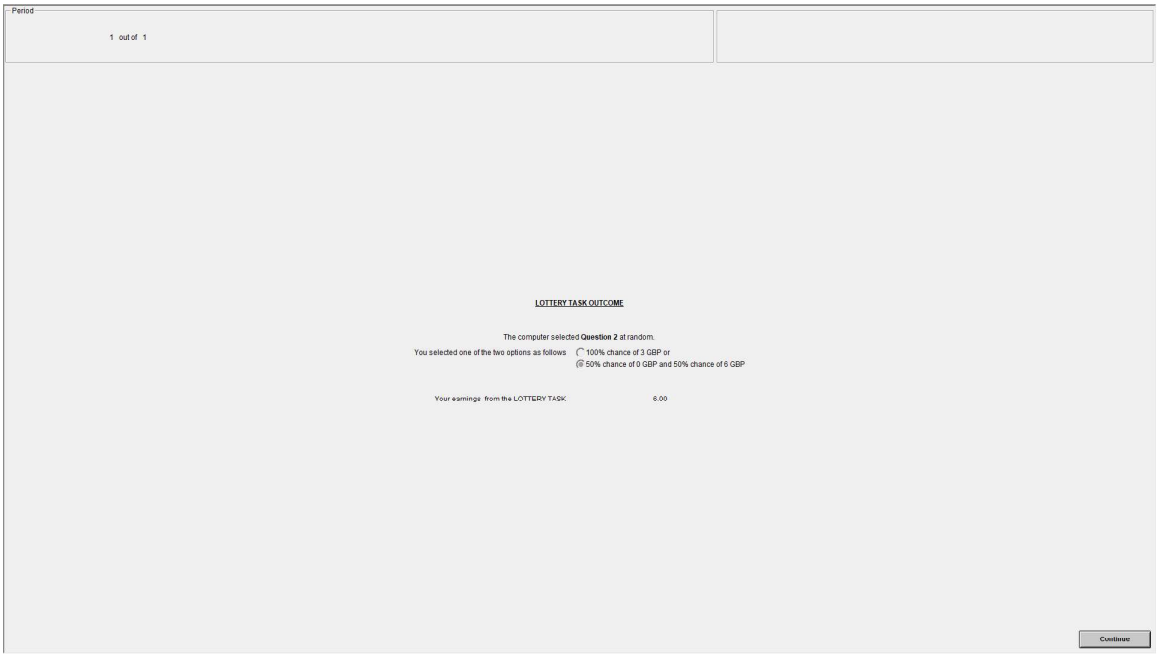
Guessed rank



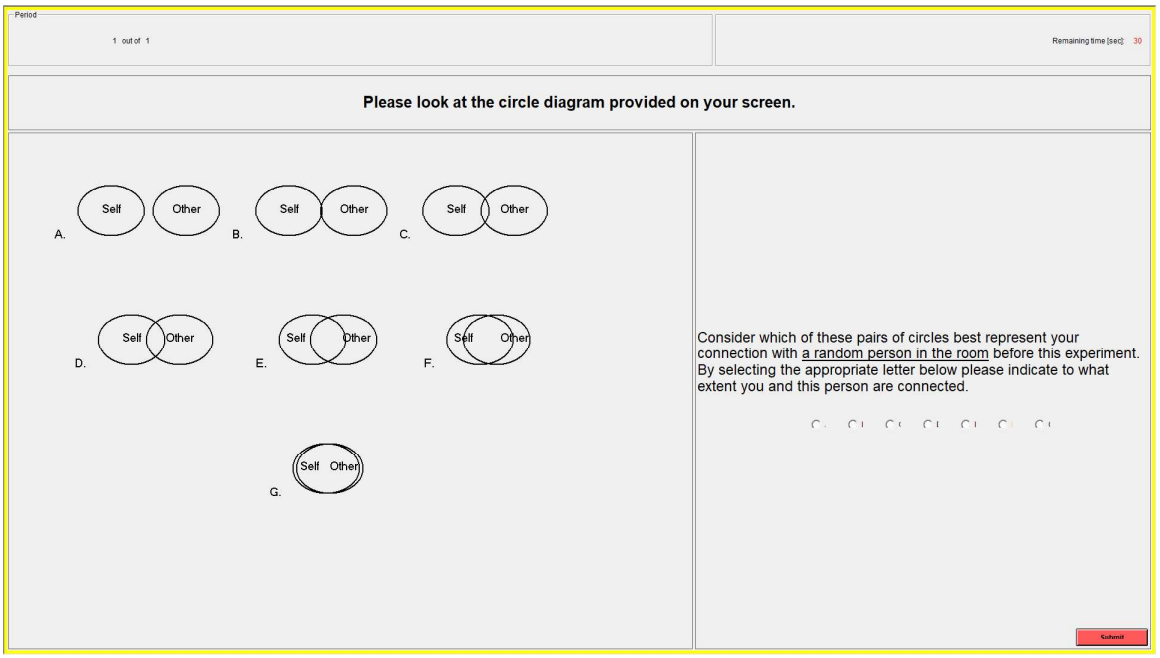
Risk



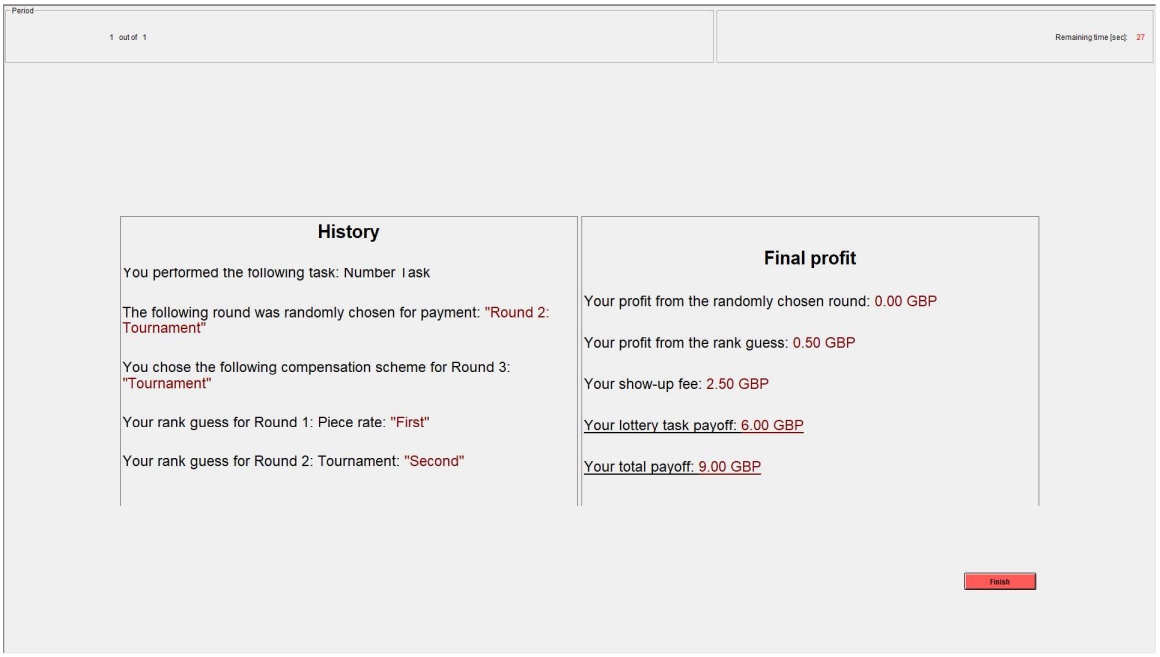
Risk



Inclusion of Others in the Self (IOS)



Payment Screen



Chapter 5

Conclusion

5.1 Conclusion

Social distance is known to cut across many dimensions. Friendship, gender, nationality etc., are some of the few characteristics that can minimise the social distance between individuals and induce pro-sociality. This thesis discusses the role of social distance under two different decision-making themes. The themes include delegation, performance and competition. In this chapter, we conclude our findings from the previous chapters and discuss further research avenues motivated by these topics.

In the previous chapters, we provided evidence on how closer social distance induces pro-sociality in the presence of a moral wiggle. We showed that in a principal-agent settling principals are less likely to delegate their decisions to an agent when the social distance between them and the recipient is minimised. We then extract the pro-social motives driving the decrease in delegation decisions. In particular, we focused on the role of directed altruism and the expectation of future reciprocal favours. We showed that conditional on principals' sharing decisions, it is directed altruism that drives the decrease in principals' delegation decisions when they are paired with their friends. We also show that, although delegation is driven by directed altruism, the choice of agent on the other hand is driven by the expectation of future reciprocal favours.

These findings shed light on the pro-social motives driving delegation decisions. Our results suggest that social relationships can drive decisions in the presence of a moral wiggle room. Further studies on social behaviours are needed to shed light on other motives behind delegation decisions. Observing the role of self-image, social image and social norms may provide better explanations for individuals' delegation decisions. These results also suggest that people do not like to shift the responsibility for a decision that

could influence both them and their friends. Delegation is driven by people's preference to shift the blame, their responsibility and punishment aversion. Further studies on principals' responsibility and the recipients' blame-shifting would shed more light on this matter.

The second theme of this thesis looks at a culturally-induced social distance and discusses how cultures that encourage closeness within their people perform better in tasks. We compare a collectivist culture such as the Chinese and an individualist culture such as British and observe their performance in a fixed and a competitive incentivised task. We discuss that institutional reforms in China have increased the level of closeness between the people in China and specifically women in China. This increase in closeness has also increased performance but has no effect on the competitiveness between the two cultures. This study opens new research avenues on the topic of closeness in cultures and its effect on performance and competition. Having other treatments, where we pair British and Chinese subjects together and observing their competitiveness may provide a better understanding of the role that culture plays in performance and competition. Also, identifying cultures as altruistic based or reciprocity based would provide more information on characteristics driving the decisions in that society. Our research also opens new avenues for further research on cultural perception and competition.

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