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Feelings of Responsibility under Risk: The Role of Social Distance

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Abstract In many different contexts individuals take decisions on behalf of others. In this paper, we focus on lotteries with negative expected value and study if (and how) risky choices made on behalf of another person differ i) compared to decisions which do not affect anyone else, and ii) depending on the social distance between who makes the decision and who is affected by it. Our results show that social distance (i.e., whether the person affected by one's decision is an unknown stranger or a friend) is an important determinant when people decide on behalf of others. Moreover, when deciding on behalf of a friend rather than only for themselves or a stranger, average individual behavior is closer to expected value maximization, exhibiting less risk taking. We interpret these findings as evidence of feelings of responsibility affecting the decision making process whenever the social distance is shortened. Controlling for order effects shows that experiencing a decrease in social distance is crucial in activating this feeling.

Keywords Risk seeking · Feelings of Responsibility · Social Distance · Friends · Lottery · Risky Choices

JEL classification: A13 C91 D64 D81

1 Introduction

Individuals take decisions affecting themselves as well as others, like spouse, children, colleagues, employees, shareholders, customers, patients, and citizens. De-

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spite the fact that these situations are extremely common in everyday life, still little is known about how feeling responsible for another person affects the individuals' decision making (see e.g. Charness and Jackson, 2009; Sutter, 2009; Bolton and Ockenfels, 2010; Pahlke et al, 2015).

The aim of this paper is to study how risk taking varies when risky choices are made on behalf of another person under different levels of social distance compared to the case when decisions do not affect anyone else. We proceed in two steps: first we focus on how the presence of someone else affects the individuals' risky choices, then, we concentrate on social distance to investigate whether not only the presence of another person, but also his/her closeness with the decision maker matters. The first step premises the second, which is relevant only if the decision maker takes into account other's outcome or feels responsible for others' gains and losses. Previous studies have investigated decision making in social context, and particularly on behalf of others, but we lack a comprehensive framework about risk. While some works suggest that deciding for others is different from the case in which none else is involved (Sutter, 2009), other results do not show any difference (Andersson et al, 2014). Based on this mixed evidence, therefore, it is not a priori obvious how, and to which extent, the presence of another person affected by the outcome of the risky choice enters in the decision process. Our second step of investigation focuses on the social distance that is on the degree of similarity, closeness, or "emotional proximity" between individuals involved in a certain situation (Charness and Gneezy, 2008). When deciding for others, social distance becomes an inherent feature: the decision maker is usually aware of the person for whom is deciding. Furthermore, the level of social distance changes substantially from completely anonymous situations (politicians-citizens) to highly close situations (husband-wife), thus it seems an important dimension to explore.

Our investigation concerns risky choices made in the context of lotteries yielding a negative expected value.[1] Most of the literature usually considers lotteries in the

[1] For the sake of brevity, the terms "risky choice" and "lottery" are used interchangeably in the paper referring to lotteries with negative expected value.

gain domain (Charness and Gneezy, 2010), on the contrary tasks in the loss domain are rarely analyzed (exceptions are Shupp and Williams, 2008; Pahlke et al, 2015). Yet, existing evidence show that people exhibit risk seeking behaviors, such as taking risky choices with associated negative expected value (i.e. buying lotteries), which are inconsistent with expected value maximization.[2] Therefore, our paper aims at improving the understanding of the decision making of risk-seeking choices when deciding for others.

With this aim in mind, we designed an experiment to study the behavior of a decision maker (active participant, identified with 'he') confronted with a lottery, which has consequences both for himself and another person (passive participant, identified with 'she'). Feeling responsible for another person's earnings can affect the decision making process of the active participant because he may wish to avoid blame and guilt or he may try to align his risk preferences with the ones of the passive participant. In addition, 'socialization' may have induced the idea that, when in a position of responsibility, more caution is necessary (Charness and Jackson, 2009).

To study the effect of social distance, we change the identity of the person for whom the active participant decides implementing two polar cases: deciding on behalf of an anonymous stranger or deciding on behalf of a friend who comes to the laboratory together with the decision maker. While a decision for an anonymous stranger represents a situation characterized by high social distance without the possibility of any feedback, a decision on behalf of a friend is characterized by low social distance and, most likely, will be discussed after the experimental session. This design, implying a different level of awareness of the risk propensity of the passive participants and inducing distinct feelings of responsibility, captures reasonably well the features of the two extreme situations we want to study.

[2] People spend a consistent amount of money to play lotteries and commercial gambling (Kearney, 2005; Clotfelter and Cook, 1990). Some people enter self-employment and inventive activities, that, on average, have negative returns and high variance (Åstebro, 2003). Households overinvest in the most skewed assets, like stocks with higher volatility and large positive skewness (Kumar, 2009).

In a first set of experimental sessions, each active participant decides, in a fixed order, first for himself, then on behalf of an anonymous stranger and finally on behalf of a friend. To control for potential order effects occurring through the three decisions we collected additional data. Specifically, we investigated i) whether the decisions made by the active participants for themselves change depending on the fact that they are made in the first or last experimental part, and ii) whether the order of the decisions made on behalf of others matters, (that is whether decisions differ depending on the fact that participants experience an increase or decrease in the social distance).

In addition, we study whether decision making on behalf of others is affected by the frequency of the feedback received about the outcome of the risky choice. This allows us to investigate whether feeling responsible for another person's earnings affects myopic loss aversion (MLA, henceforth). MLA is a well-documented behavioral biases and it predicts that subjects are willing to invest more money into a lottery the longer the risky choices horizon and the less often they receive feedback (see, e.g. Gneezy and Potters, 1997; Charness and Gneezy, 2010).

We report three main results. First, we find that when deciding on behalf of others, despite all else being equal, individuals make different, and safer, choices than when they decide only for themselves. In details, when deciding on behalf of an anonymous stranger or a friend, individuals make, respectively, slightly and remarkably less risky decisions. These choices made on behalf of others seem affected by feelings of responsibility modulated by the social distance between the decision maker and the participant affected by the outcome of the decision. When controlling for order effects, we find that experiencing a decrease in social distance (i.e. deciding for a friend *after* having decided for a stranger) is crucial for observing this shift in the behavior. One possible explanation is that experiencing a reduction in social distance makes salient the different level of responsibility associated to deciding for a friend rather than for a stranger. Moreover, when deciding on behalf of a friend, we find that the closer the friendship relationship between the decision maker and

the passive participant, the safer is the choice taken on her behalf.
Second, similarly to the decision process when none else is involved, myopic loss aversion is confirmed for decisions made on behalf of a stranger and, to a lesser extent, a friend. Third, we investigate the key factors influencing the decision making on behalf of others. Heterogeneity in individual risk propensity accounts for differences in the risky choices, and personality traits, as extraversion, also have an impact. Despite the relevance of individual characteristics in explaining risky choices, still our evidence suggests that both feelings of responsibility and social distance play a significant role highlighting that decision making on behalf of others is a complex process.

The remainder of the paper is organized as follows. Section 2 discusses the relevant literature and, Section 3 explains the experimental design. Section 4 formulates our research hypothesis. Sections 5 and 6 present the experimental procedures and the main results, respectively. Section 7 discusses the impact of order effects on our results. Section 8 concludes.

2 Related Literature

Our paper is related to different streams of literature. Situations involving responsibility identify cases in which the decision maker decides for others as well as himself. In distributional games characterized by the absence of any risk (typically dictator, ultimatum, and public good games), previous studies show that people care about others' payoffs exhibiting other regarding concerns (Fehr and Schmidt, 1999; Charness and Rabin, 2002) and feelings of responsibility (Charness and Jackson, 2009). Charness and Jackson (2009) study the Stag Hunt game and find that about one-third of the participants is sensitive to the issue of being responsible for another person's welfare and that in almost the 90% of these cases, the decision maker takes on less risky strategy when he is the agent for another party than when decides for his own.

However, it is less clear if (and how) other regarding preferences and feelings of responsibility affect decision making in risky environments. While there have been few attempts to theoretically model these situations (see, e.g. Trautmann, 2009), more recently a growing number of experimental studies have investigated decision making in a risky context on behalf of others. Bolton and Ockenfels (2010) in a dictator game with risky options show that individuals tend to be more risk averse when the outcomes of the risky decision affect both themselves and the recipient. Using a similar setting, Brock et al (2013) find that both ex ante and ex post fairness motives are important. A few studies analyze more explicitly risk in social context. Some works analyze the context of groups,[3] and consider how risky decisions shift by having the others' payoffs as social reference point (Linde and Sonnemans, 2012), by interpersonal interaction and persuasion (Shupp and Williams, 2008; Charness et al, 2013), or by having simply information about others choices (Viscusi et al, 2011). Rohde and Rohde (2011) study the effect of payoffs and lotteries other people (a group) face. Along this line, some works consider the decision making for another person focusing on risk taking under a given level of social distance (see Chakravarty et al, 2011; Sutter, 2009; Eriksen and Kvaloy, 2010; Andersson et al, 2014). In most of these papers choices pertain lotteries with positive expected value. An interesting exception is Pahlke et al (2015), who study decisions on behalf of others under different domains (gain, loss, or mixed domain), finding that this varies the risk attitude of the decision maker. We focus on lotteries yielding negative expected value to capture a situation where people take decisions on behalf of someone over risky choices, as it is observed in many real-life situations. Moreover, we differentiate from the previous contributions by varying the social distance (SD, henceforth) as we believe it is an important feature in the decision process anytime someone is involved.

Several laboratory experiments focus specifically on SD and operationalize it in alternative ways: i) based on participants' demographic similarities, e.g. race, nation-

[3] Abdellaoui et al (2013) study risk preferences in couples while Carlsson et al (2012) investigate decisions made for general public.

ality, (Glaeser et al, 2000) and other individual characteristics (Frey and Bohnet, 1999; Charness et al, 2007); ii) creating artificial (minimal) groups as defined by Tajfel and Katok (1970) as in Ball and Eckel (1998); or iii) reducing anonymity as in Hoffman et al (1996). For example, full names were revealed in Holm (2000) and Fershtman and Gneezy (2001) to signal gender and ethnicity. Impersonal communication was introduced by Frohlich and Oppenheimer (1998), while Frey and Bohnet (1999) and Rankin (2006) used face-to-face interaction. Irrespectively from how SD is defined and measured, in all these studies the underling hypothesis is that people act more favorably toward those with a higher degree of social kinship. Therefore, decreasing SD should increase the strength of the feelings of responsibility in the decision making process. Indeed, these studies document a positive and significant correlation between the reduction of SD and the frequency of non-selfish decisions. To our knowledge, this paper is the first study to assess the role of SD in the context of risky choices.

Finally, a well-established literature on behavioral biases have combined loss aversion and mental accounting developing the myopic loss aversion theory, that has been documented in individual decisions (Gneezy and Potters, 1997; Thaler, 1997; Charness and Gneezy, 2010) and group decisions (Sutter, 2007). An individual is said to be loss averse if he weights losses more than gains of equivalent size (Kahneman and Tversky, 1979). When an individual evaluates the lottery outcomes at a high frequency, he experiences a greater dissatisfaction with a negative outcome compared to the case of low frequency evaluation (Thaler, 1985).

3 Experimental design

In this section we illustrate the risky choice task (Sect. 3.1) and the treatments implemented (Sect. 3.2).

3.1 The risky choice

We design our risky choice task by introducing a small variation to the task used in Gneezy and Potters (1997) and Charness and Gneezy (2010) such that our lottery has a negative expected value. Each participant is given 100 ECUs (where ECUs denote the experimental currency unity, and 1 ECU corresponds to 1 eurocent) as endowment and asked to choose the portion of this amount (between 0 and 100) that he wishes to put on the lottery. The ECUs not used in the lottery together with the ECUs gained determine the earnings obtained from a given risky choice. Our experiment has three parts. In each part, participants are confronted with an identical sequence of 12 independent risky choices, presented in four blocks of three identical lotteries each.[4] As shown in Table 1, in each experimental part risky choices from 1 to 6 (i.e., block 1 and block 2) correspond to lottery A. Lottery A is successful with 0.33 probability, returning 2.5 times the amount put, while it fails with a complementary probability of 0.67, returning 0. Risky choices from 7 to 12 (i.e., block 3 and block 4) correspond to lottery B. Lottery B, which is successful with 0.25 probability, returning 1.8 times the amount put, while it fails with a complementary probability of 0.75, returning half of the amount put.[5] Note that a decision maker who adopts the expected value criterion for his decision (e.g., maximizes a utility function simply based on expected value) would never put any amount on each of the two lotteries.

3.2 The treatments: social distance and feedback

Our experimental design varies two main factors: the SD and the feedback frequency regarding the outcome of the risky choice. The SD is varied within subjects and, therefore, within a session subjects experience different levels of SD (one in

[4] Subjects are informed that the three decisions contained in each block are identical. More details can be found in the Instructions reproduced in English in the online Appendix B.

[5] The two lotteries give the same (negative) expected value, but differ both in their variance ($Var(A) > Var(B)$) and in the fact that money put on the lottery can be totally or partially lost in case a negative outcome realizes.

each of the three experimental parts). The feedback frequency is varied between subjects and, therefore, within a session participants always face the same type of feedback for all three parts. Table 2 summarizes our treatments.

Social distance. To investigate the impact of SD we run three treatments within subjects. In the own treatment (OT), each participant decides only for himself and his decisions have no consequences for anyone else. The OT constitutes our measure of individual propensity to risk taking in the environment under consideration. In the other two treatments subjects are divided in to active and passive participants and retain their role over the two treatments featuring decisions on behalf of others. In the stranger treatment (ST), the active participant makes his risky choices on behalf of an anonymous passive participant. Anonymity is common knowledge in this treatment. In the friend treatment (FT), the active participant makes his risky choices on behalf of the friend who came with him to the lab. The identity of the decision maker is known to the passive participant in this treatment.
In a first set of experimental sessions participants experience the three treatments OT, ST and FT in a fixed order. In Section 7 we present results from additional sessions varying the order of the three treatments to control for order effects as, e.g. learning, fatigues. We ran four sequences: varying whether i) the OT treatment is the first or last encountered, and ii) whether there is an increase or decrease in the social distance experienced by participants, that is the order of the ST and FT treatments.

Feedback frequency. We implement two variations in the feedback frequency between subjects, as in Gneezy and Potters (1997) and Charness and Gneezy (2010). In the frequent feedback treatment (FFT) in each of the twelve risky choices, each subject first decides how many of the 100 ECUs to put on the lottery. Then he receives feedback about the outcome of the risky choice in that period, and after that another period starts until the twelfth risky choice is completed. Differently, in the infrequent feedback treatment (IFT), each subject is informed about the outcome of the lottery after a block of three periods, and he then makes a risky choice for a block of three periods at a time. Therefore, in the IFT each subject, at the beginning of each block of risky choices, has to decide how much of his 100 ECUs endowment to put on the lottery for the three subsequent periods, and these risky choices are restricted to being equal within each block. By varying the feedback frequency, we measure how MLA influences risky choices.

We run separate sessions for males and females participants based on previous evidence showing both i) differences in decision making under risk across gender (Croson and Gneezy, 2009) and, ii) the relevance of gender stereotypes (e.g., females being more risk averse than males as passive participants Daruvala, 2007) as well as beliefs about others' risk preferences when deciding on behalf of others (Chakravarty et al, 2011).

Payments. Since we are interested in studying if (and how) the decision environment interacts with individuals' feelings of responsibility and SD, subjects are informed that only the risky choices made in one of the three experimental parts will be randomly selected to determine the experimental earnings. Within each part, however, all twelve decisions are considered in calculating the payoff of that part (as in Gneezy and Potters, 1997; Charness and Gneezy, 2010), and the earnings cumulated in each period are shown to the active participant in each part. At the end of the twelve risky choice, both in ST and FT, the passive participants are also informed about the risky choices made by the active participant with whom they are matched as well as about the outcome of the lottery in each period. Importantly, both in ST and FT, we perfectly align the incentives of active and passive participants. This means that the risky choices of the active participant determine the same identical payoff for himself and the passive participant.[6]

[6] Specifically, the decision situation for the active participant was described as follows: "*Now we are about to start the first (second/third/fourth) block of risky choices. Each block contains*

In this way, we rule out by design any concerns for inequality of the experimental earnings between active and passive participants and, in general, any other form of other regarding concerns based on the relative comparison of experimental payoffs. We consider this as a conservative choice in terms of design. However, we think this constitutes a better compromise in order to study –in a laboratory experiment– the effect of feelings of responsibility as well as SD in risky environments, compared to other studies in the literature assigning a fixed payment to the active participants (Daruvala, 2007; Eriksen and Kvaloy, 2010).

4 Hypotheses

Our experimental design is aimed at testing two main hypotheses.

HYPOTHESIS 1.

1.a Feelings of Responsibility. Decisions made by active participants on behalf of a stranger (ST) or a friend (FT) differ with respect to decisions that do not have consequences for others (OT).

1.b Social Distance. Decisions made by active participants on behalf of a stranger (ST) and a friend (FT) differ from each other.

When deciding for others (ST or FT), differently than in our baseline (OT), the feelings of responsibility and SD may affect the active participants' decision. If being responsible for another person's earnings does not affect the active participants' choices, we should expect that, on average, the risky choices made by the active participants in OT, ST, and FT are not different from each other. On the contrary, we interpret any difference between the risky choices made in ST and

3 risky choices. In each period of a block, you will face the same project and you have to make your risky choice for the passive participant." Then, on the decision screen the active participant was required to do the following: "*Please indicate how many ECUs of the PASSIVE participant you want to invest in Project 1. The ECUs that you don't invest will be accumulated in the total balance of the PASSIVE participant.*" Finally, in the instruction the following was specified: "*If this part, i.e., part 2, is selected, then: 1) the passive participant matched with you will earn the sum of the earnings obtained as a consequence of your risky choices in each of the 12 periods of part 2. 2) You will earn the same amount of ECUs he earns.*" See the online Appendix B for more details.

FT (compared to the risky choices made in OT), as evidence of the relevance of feelings of responsibility (Hypothesis 1.a).[7]

In situation involving responsibility, it does not only matter whether someone else is affected by own risky choices, but the SD between the active and the passive participants may also play a role. Specifically, in situations characterized by low SD (e.g., in FT), the feelings of responsibility should have a stronger role in the decision making process compared to situations characterized by high SD (e.g. in ST). If SD does not affect individuals' risky choices, then we should not observe any difference when comparing decisions in ST and FT. On the contrary, we interpret any difference in these decisions as evidence of the role of SD, (Hypothesis 1.b).

HYPOTHESIS 2.

2. Myopic Loss Aversion. Amounts put on the lotteries by active participants on behalf of a stranger (ST), or a friend (FT), are lower in the frequent feedback environment (FFT) than in the infrequent feedback environment (IFT).

The frequency treatments allow us to investigate MLA (i.e. individuals putting less money in the FFT compared to the IFT) when an active participant decides on behalf of a passive participant. In particular we want to test whether it is a persistent behavioral bias to situations in which decisions are taken on behalf of another person, as in ST and FT. Whether feelings of responsibility and SD magnify or reduce MLA compared to situations when decisions do not have consequences on others is an open question.

[7] As discussed in Charness and Jackson (2009), the feeling of responsibility can activate three different behavioral mechanisms: i) the avoidance of blame and guilt; ii) the attempt to match the risk preferences of the passive participant; iii) the idea that once in a responsibility position one should behave in a more cautious way. The mechanism in ii) is compatible with models of altruism, i.e. where participants' payoff depends on their own monetary payoff and –as an externality– the payoff of their opponents (see Becker, 1974; Andreoni, 1990). In fact, given the risk sharing payment scheme we adopted in ST and FT, we can exclude by design that our findings can be explained by models based on the relative comparison of payoffs as, for example, in Fehr and Schmidt (1999) since our active participants do not face any trade-off between own and other's payoff.

5 Procedures

The experiment was programmed in z-Tree Fischbacher (2007) and conducted at the experimental laboratory of the Max Planck Institute of Economics Jena (Germany) between April and August 2013. The participants were undergraduate students from the Friedrich Schiller University Jena; they were recruited using the ORSEE software Greiner (2004) and invited to come to the lab with a friend of the same gender.[8] All students participating in Jena were confronted with the same sequence of decisions: OT-ST and FT. Upon entering the laboratory, subjects were randomly assigned to visually isolated computer terminals. Participants were informed that the experiment had three parts and that they would receive instructions for the second (third) part once the first (second) part was completed. Our matching protocol is such that, once part 2 starts, each friend of the couple knows that everyone has the same probability to be assigned the role of active and passive participant. Once roles are assigned in part 2, they are then retained in both parts 2 and 3, but subjects are informed about the content of each part (and about their role not changing from part 2 to part 3) only when part 2 is concluded (see the Instructions in the online Appendix B for details).

The two frequent and infrequent feedback treatments were run in a between-subject design, i.e., each subject participated in only one of the two treatments. In both treatments participants were always confronted with the same sequence OT-ST-FT, in which after a decision for themselves, participants experienced a decrease in social distance deciding for a stranger and for their friend, respectively. We ran twelve sessions per treatment, six entirely composed of females and six entirely composed of males. Each session involved from 14 to 30 participants, as shown in Table 3. Sessions lasted about 80 minutes. Average earnings of the experiment were 16 euros including 2.5 euros for showing up.

[8] The name, surname, and e-mail address of the friend had to be communicated via email to the experimenters at least 24 hours before the scheduled sessions in order to verify that s/he had not participated in another session of the same experiment before.

Between April and June 2016 a second set of experimental sessions were conducted in Copenhagen (Denmark) at the Laboratory of the Center for Experimental Economics (CEE) at University of Copenhagen in order to control for order effects occurring through the three experimental parts. Procedures for recruitment of participants and conduction of the experimental sessions were identical to the ones adopted in Jena.[9] We concentrated on four different sequences: 1) OT-ST-FT; 2) OT-FT-ST; 3) ST-FT-OT; 4) FT-ST-OT and only consider the Infrequent Feedback treatment.[10] We ran sixteen sessions in total, eight entirely composed of females and eight entirely composed of males. Each session involved from 8 to 22 participants, as shown in Table 4. Sessions lasted about 90 minutes. Average earnings of the experiment were 150 DKK including 20 DKK for showing up.[11] We report results from these additional sessions in Section 7. A detailed discussion on the difference between the subject polls in the two locations is reported in the Online Appendix A.

6 Results

We present our experimental results in three steps, each corresponding to a separate section focusing on the behavior of active participants. Section 6.1 reports information about the (average) risky behavior of active participants. Section 6.2 investigates MLA when decisions are taken on behalf of others, Section 6.3 explores the impact of individual characteristics.

[9] The only exception was that, while in Jena the experiment was conducted in German, in Copenhagen, following the norm of the laboratory, the experiment was conducted in English and participants were mostly exchange students visiting Copenhagen University for one or two semesters during their master or bachelor program. We thank the Editorial Board and an anonymous referee for advising on this part of the analysis.

[10] As our main results concerning social distance do not differ varying the feedback frequency, we limit the additional sessions to the IFT.

[11] In June 2016 10 DKK corresponded to 1.34 Euros.

6.1 Risky choices: the role of feeling of responsibility and social distance

In this section we examine the risky choices of the active participants depending on i) whether the risky choice is made on behalf of another person or not, and ii) the level of SD between the decision maker and the passive participant. Our analysis focuses on two measures: the average amount of ECUs put on the lottery, and the average number of times an active participant decides not to put any ECUs on the lottery. To deal with this second measure we define the variable *safe choice* as a dummy that, in each period, takes value 1 if the active participant does not put any ECUs on the lottery while it is equal to 0 otherwise. Our findings confirm hypothesis 1 and are summarized in Result 1:

RESULT 1

Result 1.a *Irrespectively from the feedback frequency, risky choices made on behalf of another person differ with respect to risky choices with no consequences for others. In particular, decisions made on behalf of stranger (ST) do not differ with respect to risky choices with no consequences for others (OT), while risky choices made on behalf of a friend (FT) are different.*

Result 1.b *Irrespectively from the feedback frequency, the risky behaviors vary with the level of social distance between the decision maker and the passive participant. When the social distance is shortened (i.e., risky choices affect a friend rather than a stranger), active participants, on average, behave more in line with expected value maximization, exhibiting less risk seeking.*

Result 1 holds when looking both at the average amount of ECUs put on the lottery, represented in Figure 1 and at the average proportion of safe choices, represented in Figure 2. Specifically, Figure 1 plots the mean of the ECUs put on the lottery depending on the SD both irrespectively from the feedback frequency (panel a), and separately for the FF and IF treatments (panel b and c, respectively). Figure 2 has the same structure of Figure 1 but it plots the average proportion of safe choices. Table 5 reports results from non-parametric tests for the two measures.

Consider first Result 1a and focus on the average amount of ECUs put on the lottery in each part. When, irrespectively from the feedback frequency, active participants decide only for themselves (OT), they put, on average, 29.76 ECUs on the lottery, while when deciding on behalf of another person they put, on average, 26.66 ECUs. Specifically, when deciding on behalf of a stranger (ST), they only slightly decrease the average amount to 28.84 ECUs, while, when deciding on behalf of a friend (FT), they put, on average, 24.48 ECUs. According to a set of Wilcoxon signed-rank tests (WSR test henceforth)[12] reported in panel A of Table 5, we find significant differences when comparing the OT to the average of ST and FT (z=2.839, p=0.005). No significant differences are found when comparing the OT and ST (z=1.296, p=0.195), while we do find a significant treatment effect between OT and FT (z=3.724, p=0.002). Consider now our second measure of individual behavior based on the average proportion of safe choices. We observe a pattern very similar to the one evidenced for the average amount,[13] with an increase in the average proportion of safe choices recorded when participants decide on behalf of another person rather than just for themselves. Comparing the average proportion of safe choices, we find that in OT a safe choice is made, on average, 27% of the time, but in ST and FT it is made, on average, 28% and 40% of the time, respectively (see Figure 2). According to a set of WSR tests, differences only significant at 10% when the passive participant is a stranger, while highly significant when is a friend (OT vs ST: z=1.679, p=0.093; OT vs FT: z=4.797, p = 0.000), see panel B in Table 5.

Result 1b focuses on the effect of decreasing SD on risky choices. To this end, we compare both the average amount of ECUs put on the lottery and the average

[12] Unless not differently specified, all tests reported are two-sided.

[13] The two measures are highly correlated: participants who choose more often not to put any ECUs on the lottery, also tend to put a lower amount of ECUs the times they put something (According to a set of Spearman correlation measurements: $FFT+IFT$: $\rho = -0.602$, $p = 0.000$; FFT: ρ=-0.569, $p = 0.000$; FFT: ρ=-0.588, p=0.000). This suggests that choosing to put some ECUs on the lottery few times but with a very high amount of ECUs seems not to be a very common behavior in our data.

proportion of safe choices in the ST and FT. We find that the average amount of ECUs put on the lottery decreases and, correspondingly, the average proportion of safe choices increases (WSR tests: ECUs put on the lottery ST vs FT, z=3.724, p=0.002; average proportion of safe choices: ST vs FT: z=4.797, p=0.000). At the aggregate level, decreasing SD seems to affect active participants' risky behavior inducing choices which are more in line with expected value maximization.[14]

Inspection of panels b and c of Figure 1 and Figure 2 reveals that Results 1a and 1b hold separately for the FFT and the IFT both for the average amount of ECUs put on the lottery and the average proportion of safe choices, respectively.[15] From a first comparison of the frequency treatment, it can be noted how differences in the average amount put at risk are larger across the experimental parts in the IFT, but the role of the feeling of responsibility and SD is only slightly attenuated in magnitude in the FFT, suggesting a different impact of the feedback frequency on decision taken on behalf of another person. The role played by the feedback frequency is further analyzed in section 6.2.

6.2 Deciding for others and Myopic Loss Aversion

In this section, we compare our FFT and IFT in order to verify whether MLA is present also when risky choices are made on behalf of others. Our findings support Hypothesis 2 and are summarized in Result 2.

RESULT 2 *Amounts put on the lottery by active participants on behalf of a stranger or a friend are lower in the frequent feedback environment rather than in the infrequent feedback environment. The impact of feedback frequency is lower when active participants decide on behalf of a friend.*

[14] For the participants, it is common knowledge that only one of the three experimental parts will be randomly selected at the end of the experiment to determine the experimental earnings. This feature of the experimental design aims at reducing the influence of earnings from an earlier part on the behavior of the subsequent one. Order effects are discussed in Section 7.

[15] Both results 1a and 1b hold when separately considering Lottery A and Lottery B; see the online Appendix A.

When comparing the participants' behavior in the OT, depending on the feedback frequency, in line with previous findings our data evidence a pattern consistent with MLA: the average amount of ECUs put on the lottery is lower in the FFT than in the IFT (Two-sample Mann-Whitney test, MWT henceforth, one-sided: z=2.448, p=0.007) and similarly, average proportion of safe choices is higher in the FFT than in the IFT (one-sided MWT: z=3.541, p=0.000).[16] We find similar results when the decision maker makes a decision on behalf of others. Specifically, in the ST the difference is statistically significant both when looking at the average amount of ECUs put on the lottery (one-sided MWT: z=2.763, p=0.003) and when considering the average proportion of safe choices, (FFT-ST=0.41, IFT-ST=0.15; one-sided MWT: z=3.553, p=0.000). Whereas the difference regarding safe choices is statistically significant (FFT-FT=0.49, IFT-FT=0.29; z=2.134, p=0.017), the difference in the average amount of ECUs put on the lottery is only significant at 10% (z=1.539, p=0.061) when decisions are made on behalf of a friend.

One may view the lower effect of the frequency feedback treatment as evidence of a moderate effect of the MLA when the decision is made on behalf of a friend. However, this result has to be interpreted with caution. The decision maker in the friend treatment reduces the risky choices in the lottery already in the IFT, which may suggest that feelings of responsibility and SD prevail over the influence of MLA on risk taking. We investigate further this issue in the next section where we look at individual behavior.

6.3 Individual behavior

So far we considered the average behavior of active participants, however in the attempt to shed light on the decision making process when someone else is involved, in this section we report results from a regression analysis aimed at explaining

[16] Interestingly, FFT induces a behavior more closely related to expected value maximization. In contrast, Haisley et al (2008) document the existence of a reverse myopic effect for lottery tickets with very small probability of a large gain.

behavioral patterns taking into account individual characteristics. Our findings can be summarized as follow.

RESULT 3 *Differences in risky choices across treatments are explained, to some extent, by individual risk attitude and personality traits.*

In Table 6 we present estimates from a set of Tobit regressions[17], with robust standard errors clustered at the individual level. The dependent variable is the amount of ECUs put on the lottery by active participants. In all models, we control for the feedback frequency, the blocks of periods (where blocks 1 -our benchmark- and 2 correspond to lottery A and blocks 3 and 4 correspond to lottery B), the gender (where the dummy male indicating the gender of the decision maker) and the player's self reported risk attitude, SOEP.[18] In models 1 and 2 we pool together observations of the three parts (OT, ST and FT) and add a dummy variable each for the *Stranger* and *Friend* treatment, while in models 3 and 4 we only consider the ST and FT. In models 2 and 4 we add as controls the age (in years) self-reported by the participants, whether the active player is attending/attended a program in economics (captured by the dummy *Study Economics*), the income class.[19] We also include the dummy *Close friend in lab* (taking value 1 if the active participant considers the passive participant a close friend, and 0 otherwise), and the beliefs about a passive participant's SOEP, i.e. beliefs about an anonymous stranger(friend)'s SOEP in ST(FT). This last variable allows us to control for the fact that concerns for a passive participant may be the result of the willingness to do what the passive participant would have done. Finally we also include the scores for the Trait Emotional Intelligence Questionnaire (TEIQue) and the variable

[17] We choose a Tobit model since our dependent variable, i.e. the amount of ECUs put on the lottery, is censored.

[18] The general risk question of the German Socio-Economic Panel (SOEP) requests that participants give an assessment of their own general willingness to take risks on a 0-10 scale. Participants were also asked to indicate an anonymous stranger's and their friends' general willingness to take risks. On the behavioral validity of this measure in economic experiments see Dohmen et al (2011).

[19] Participants could indicate their monthly income after tax (including study loan and any transfer payments) by indicating 8 income classes, from class 1: 0-500 Euros per month, to class 8: more than 2001 Euros per month, with intervals of 250 Euros each, etc: 501-750; 751-1000, etc.

(TIPI) Extraversion.

When looking at the regressions output, results are consistent with the pattern identified in previous sections. Consider first models 1 and 2 where data from all three parts are included. The frequency treatment variable is always negative and statistically significant. Coefficients of the dummy variables identifying ST and FT are negative but statistically significant only when the decision is made on behalf of a friend, confirming previous results. In both models, the significantly positive coefficient of the SOEP variable indicates that the individual risk attitude has predictive power for the amount of ECUs put in the lottery while the coefficient for gender does not achieve significance. In model 2 we also find that the variable (TIPI) Extraversion has a positive and significant effect on the amount put in the lottery -in line with findings from previous research (see e.g. Vestewig, 1977; Nicholson et al, 2005)- having a close friend in the lab has a negative coefficient but not significant, as well as the measurement of the Emotional Intelligence trait. Other controls for the socio-economic background, as income, are not statistically significant.

When considering models 3 and 4, which refer to the risky choices in ST and FT, it can be noted that results are similar to the ones of models 1 and 2 and that the beliefs about the passive participant's SOEP are positive but do not achieve statistical significance. Importantly, in all models the coefficient of the friend dummy is negative and statistically significant, confirming our conjecture that SD plays an important role when decisions are made for others.

7 Order Effect

In the experimental sessions conducted in Jena participants always experience a reduction in SD when passing from part 2 (ST) to part 3 (FT) of the experiment. In this section we present the results from the additional experimental sessions aimed at testing the impact of the order of the OT, ST and FT treatments on our results. In particular, we will discuss i) potential effects of experiencing an increase or decrease of social distance when deciding on behalf of others (Section 7.1), and ii) the role of learning and fatigue by comparing the average and the variance of the amount of the of ECUs put in the risky choices depending on facing a given treatment as first or last treatment in the sequence of the three parts (Section 7.2). In the Online Appendix A we provide further details regarding the differences in the subject pools of the two locations.

7.1 Increase and decrease of Social Distance

When comparing the sequences varying on the fact that participants experience an increase (i.e. seq. 2 and 4) or a decrease (ie. seq. 1 and 3) of SD, we find that Result 1b is replicated only for participants deciding for a friend after having decided for a stranger, i.e. experiencing a decrease in social distance.[20]

The average amount of ECUs and the average number of safe choices for seq. 1 and 3 and for seq. 2 and 4 are reported in panel A and panel B of Table 7, respectively. Specifically, when looking at the average investment behavior when participants experience a decrease in SD (seq. 1 and 3) we find that active participants reduce the average investment in the FT compared to the ST ($t = 1.374$, $p = 0.088$, one-sided t-test). A similar pattern emerges when considering the average number of safe choices, which is small but significantly higher in the FT compared to the ST treatment (WSR test: $z = 1.414$, $p = 0.079$, one-sided).[21]

To further investigate these results, in table Table 8 we restrict out attention to the closeness between the friends participating. When looking at the post-experimental questionnaire in the two locations, indeed, we find that participants

[20] In the ST and FT we pool the data from seq. 1 and seq. 3 since differences are not significant. In the FT for i) the average investment ($z = 0.820$, $p = 0.412$) and ii) the average number of safe choices ($z = 1.062$, $p = 0.288$). In the ST: average investment ($z = 1.028$, $p = 0.304$) and average number of safe choices ($z = 0.748$, $p = 0.454$). Similarly, we pool the data for seq. 2 and seq. 4. In the FT i) average investment ($z = 0.559$, $p = 0.576$) and ii) average number of safe choices ($z = 0.482$, $p = 0.630$). In the ST: average investment ($z = 0.629$, $p = 0.529$) and average number of safe choices ($z = 0.629$, $p = 0.529$).

[21] When participants experience an increase in SD (seq. 2 and 4) we find that the average investment is not significantly different in the ST and FT treatment (WSR test: $z = 1.130$, $p = 0.259$), while the number of safe choice is significantly higher in ST compared to FT (WSR test: $z = 2.347$, $p = 0.019$).

in Copenhagen have a younger and less strong relationships with their friends in the laboratory compared to the participants in Jena.[22]

Table 8 displays the same information contained in Table 7 depending on the fact that the active participant considers the friend in the lab as a close friend or not. If we restrict our analysis to close friends we notice that in seq. 1 and 3 active participants significantly reduce the amount of ECUs both from OT compared to FT (WSR test: $z = 1.683$, $p = 0.092$) and from ST compared to FT (WSR: $z = 1.827$, $p = 0.068$). Differences for seq. 2 and 4 do not achieve significance (WSR: ST vs FT: $z = 1.189$, $p = 0.234$; OT vs FT: $z = 1.385$, $p = 0.166$; OT vs ST, $z = 1.385$, $p = 0.166$).

We also find that participants who consider the friend in the lab as a close friend invest significantly less in the FT treatment than participants who don't, (MWT: $z = 2.262$, $p = 0.024$).[23]

The regression analysis presented in Table 9 confirms these results. In Table 9 we replicate the estimations presented in Table 6 but using the data collected in Copenhagen and adding fixed effects for the four sequences. In models 1 and 2 we pool together observations of the three treatments, OT, ST and FT, in models 3 and 4 we only focus on the ST and FT treatments. In models 5 and 6 we replicate the estimations of model 4 focusing only on the sequences in which participants had experienced a decrease in social distance (i.e. seq. 1 and 3) or an increase in social distance (i.e. seq. 2 and 4), respectively.[24]

When looking at the regressions output it can be noted that results are not consistent with the pattern identified in previous sections, other than model 5 in which

[22] This can be explained by the fact that many participants are exchange students visiting Copenhagen for 6-12 months. Specifically, participants in Copenhagen are significantly less likely to consider the friend in the lab as a close friend compared to the participants in Jena (65.66% vs 79.03%, Fisher's exact test, $p = 0.010$) and are more likely to know each other since less than one year compared to Jena (48.49% vs 37.10%, Fisher's exact test, $p = 0.002$).

[23] If we focus on the average number of safe choices, in all sequences the average proportion of safe choices is not different when comparing ST and FT irrespectively from having a close friend or not in the lab.

[24] Participants in Copenhagen could indicate any amount in DKK as income.

seq. 1 and 3 are analyzed. Consider first models 1 and 2 where data from all three parts are included. Coefficients of the dummy variables identifying ST and FT are positive and weakly statistically significant in model 1, but not in model 2, once the individual controls are included. In model 2 we also find that the SOEP has a positive and significant effect, as well as the income, the amount put on the lottery. The trait of emotional intelligence has a negative and significant effect, in line with the evidence suggesting that people with high trait EI make significantly more profitable decisions than those with low trait EI (Telle et al, 2011; Rubaltelli et al, 2015). When considering models 3 and 4 referring to the risky choices in ST and FT, it can be noted that the coefficient for the FT variable has a negative coefficient, despite it does not achieve significance. Compared to models 1 and 2 other results are unchanged, with the exception that in model 4 also the variable identifying TIPI extroversion is positive and significant.

Consider now model 5, where only seq. 1 and 3 -featuring a decrease in social distance- are considered. There we find that the coefficient for the FT treatment is negative and significant, replicating the results obtained in the sessions conducted in Jena. In addition, we find that having a close friend in the lab has a negative and significant effect (quite large in magnitude) on the amount of ECUs put in the lottery. This seems to suggest that the reduction in the amount of ECUs put in the lottery is particularly strong when the active participants consider the passive participant as a close friend, suggesting that the closeness enhance the feeling of responsibility. We also find that age has a positive and significant effect, while other results are unchanged compared to model 2.

Model 6 only considers seq. 2 and 4, where participants experience an increase in social distance. The coefficient for the FT treatment is positive but not significant, attending/having attended a program in economics has a negative and significant effect, while considering a the passive participant as a close friend has an opposite

effect compared to model 5: positive and significant.[25]
Our findings suggest that experiencing an increase or decrease in social distance matter in explaining risky choices done on behalf of others. Specifically, by experiencing a reduction in social distance could enhance the feeling of responsibility when deciding for a friend rather than a stranger, which then induces less risky choice.

7.2 Learning

One explanation which might be consistent with both the existence of order effects and the patterns we have identified in our results 1a and 1b is learning. Despite the fact that each experimental part has the same probability of becoming relevant for the determination of the experimental earnings, it is possible that, by facing repeatedly the lottery over the three experimental parts, subjects realize that by reducing both the frequency of risky behavior and the amount of ECUs put on the lottery they may also increase their earnings.
An alternative explanation to learning is fatigue. As discussed in Carlsson et al (2012) and Savage and Waldman (2008), learning processes can lead to increased consistency in choices, implying a reduced variance, whereas fatigue effects will have the opposite implication. The basic idea is that participants could get tired of the choice task if it is repeated many times, and thus, their choices may exhibit increasing levels of randomness over the sequence of choice tasks (Day et al, 2012).[26]

To assess the impact of learning on our Result 1 we compare the choices of participants in the OT treatments depending on the fact that it is encountered as

[25] Compared to model 5, sign is reversed for age as well, which is negative and significant. The coefficients for the variable income and extraversion do not achieve significance, while other effects are unchanged.
[26] A situation in which learning and fatigue would point in the same direction could be observed if respondents increasingly use a heuristic decision strategy as a consequence of becoming bored or fatigued, Carlsson et al (2012).

first (seq. 1 and 2) or last (seq. 3 and 4) experimental part. In the OT treatment, decisions only affect the decision maker, so, given that concerns for deciding for others and feelings of responsibility are eliminated by design, we believe this the cleanest way to test for learning. Specifically, if learning takes places during the three experimental parts, we should observe that the amount put on the lotteries in the OT treatment when faced in the last part is lower compared to the sequences in which it is played in the first parts, where participants have not experienced the lottery with negative expected value, yet. Looking at both the average amount of ECUs and the average number of safe choices, we do not find support for the learning hypothesis, as differences do not achieve statistical significance (average amount of ECUs seq. 1 and 2: 36.42 (24.64) vs seq. 3 and 4, 34.47 (22.59), $z = 0.525$, $p = 0.60$); average number of safe choices, seq. 1 and 2: 21.07% (0.369) vs seq. 3 and 4, 17.167 (0.284) $z = 0.924$, $p = 0.356$).[27] Note that, comparing the variance of the choices, we can also exclude that fatigue, interpreted both as increased randomness of the decision, or as increased play of an heuristic decision strategy (consisting in putting 0 ECUs in the lottery), can explain our results: the variance in seq. 1 and 2 is equal to 596.453, while the variance in seq. 3 and 4 is equal to 500.817.

Findings from this section suggest that learning does not seem the main driver of the behavior patterns identified in the previous sections, while pointing in the direction of some spillover effects in the treatments where participants experience a decrease in social distance. However, due to the pre-existing differences in the two subject pools these findings should be taken with caution and call for further investigation.

[27] When focusing on the risky choices in the OT treatment we do not find significant differences comparing seq. 1 and 2 both when considering i) the average amount of ECUs ($z = 0.820$, $p = 0.412$) and ii) the average number of safe choices ($z = 1.062$, $p = 0.288$). Similarly, we do not find differences when comparing the seq. 3 and 4 with respect to the average amount of ECUs ($z = 1.028$, $p = 0.304$) and the average number of safe choices ($z = 0.748$, $p = 0.454$). When considering ST and FT in both cases, despite we observe a reduction both in the average amount of ECUs and an increase in the number of safe choices, differences do not achieve statistical significance. See the Online Appendix for detailed results.

8 Discussion and Conclusion

In everyday life individuals take decisions on behalf of others. This happens in many different contexts that differ in the social distance between the decision maker and the person affected by the decision: parents take decisions for their children; politicians affect the citizens' life; physicians' decisions are crucial for their patients; managers' decisions affect both the workers in the organizations and the shareholders, etc. Our framework offers a novel view of those situations investigating the role of feelings of responsibility and social distance. We find that deciding on behalf of others on lotteries with negative expected value leads people to behave more consistently with expected value maximization, but only when participants experience a decrease in social distance (i.e. deciding in a context with low social distance after they have decided in a context with high social distance). One possible mechanism explaining this shift in behavior may be that experiencing a reduction in social distance enhance the feelings of responsibility of deciding for a friend rather than a stranger, inducing the decision maker toward a more cautious behavior.

At first sight, our results may seem in contrast with anecdotal evidence of the excessive risky behaviors undertaken by politicians or corporate executives, which ended up with enormous costs for taxpayers and shareholders. However, our results highlight the importance of i) the identity of the person affected by the outcome of the risky choices and ii) the emotional proximity to the decision maker.

Our paper contributes to the recent debate of the decision making process in social context and, in addition, our findings are relevant for contract design when tasks concern risky choices on behalf of others. In light of the emergence of a high level of anonymity in many real world situations, our framework calls for a reconsideration of non monetary motives also in those contexts. An implication of this work is that the proximity of the relationship is a factor which deserves to be taken into account since it may induce significant differences in the level of risk taking. Further studies are required to generalize our findings about the mechanisms triggering the feelings of responsibility and social distance in different contexts (i.e., lottery with positive expected value), and the relative impact of these factors. Important avenues for future research are to explore systematically whether behavioral biases are attenuated or exacerbated in those circumstances.

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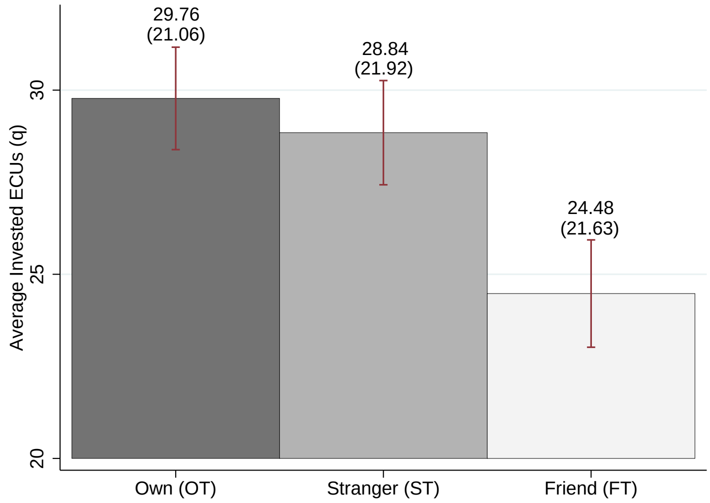
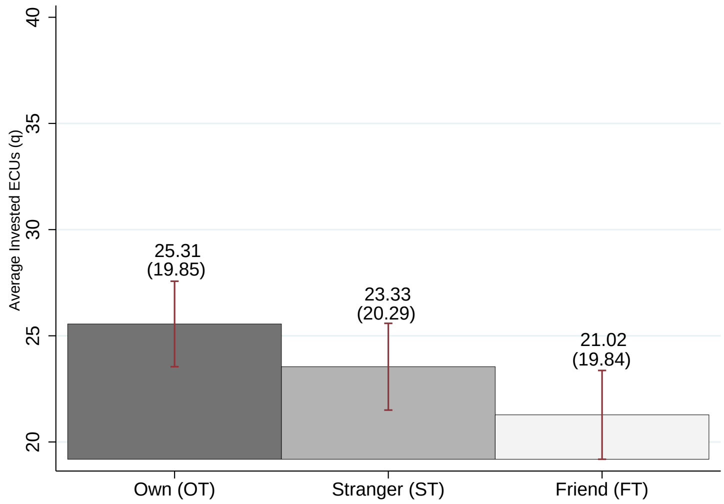
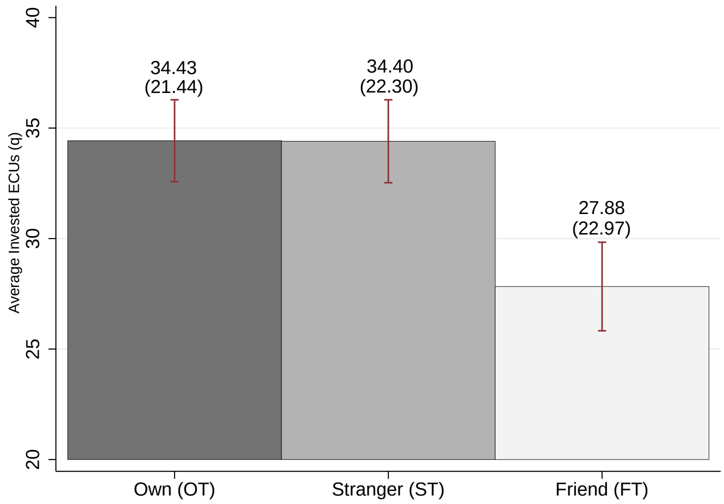


(a) Frequent and Infrequent Feedback Treatment (FFT + IFT)

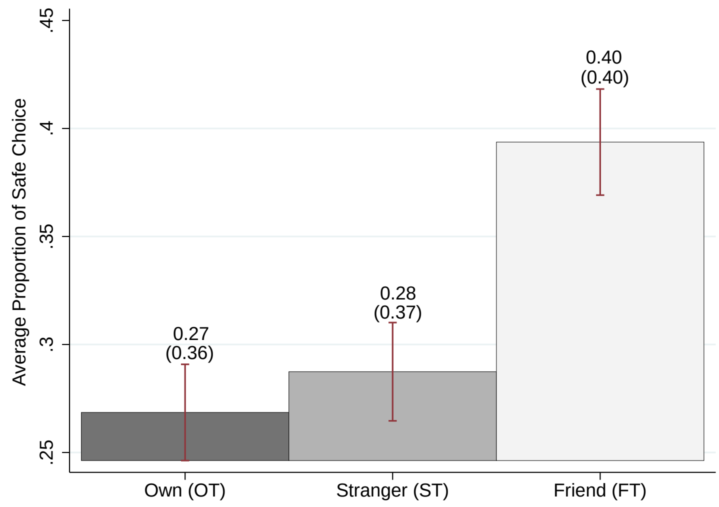


(b) Frequent Feedback Treatment (FFT)



(c) Infrequent Feedback Treatment (IFT)

Fig. 1 Mean of invested ECUs and feedback frequency. St.Dev in parenthesis



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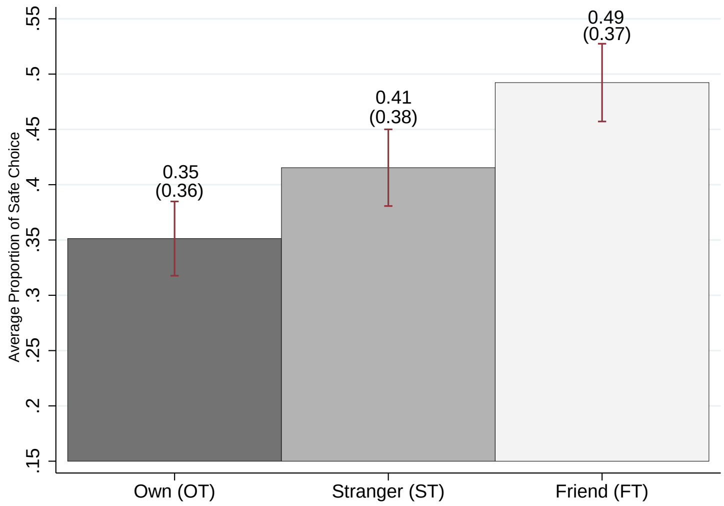
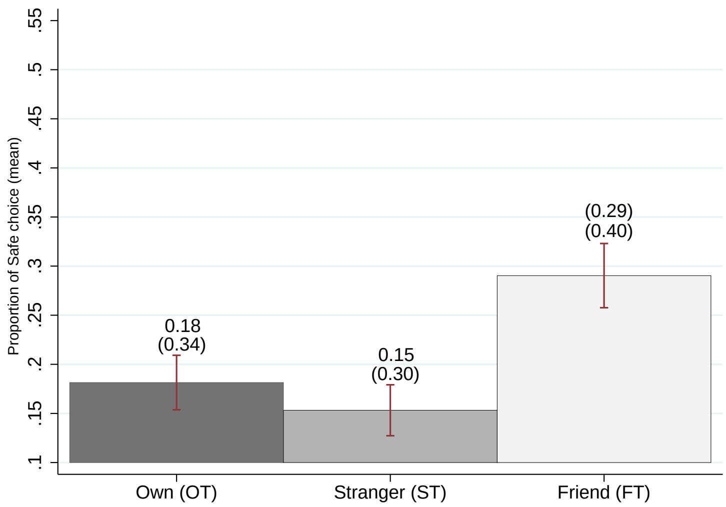


(b) Frequent Feedback Treatment (FFT)



(c) Infrequent Feedback Treatment (IFT)

Fig. 2 Average proportion of times a safe choice is made. St.Dev in parenthesis.

Table 1 Lotteries

	Success		Failure		Expected Value
	Earnings	Probability	Earnings	Probability	for full risky choices
Lottery A	2.5q	.33	-1q	.67	82.5
Lottery B	1.8q	.25	0.5q	.75	82.5

Table 2 Treatments: Social Distance and Frequency Feedback

	Social Distance	Frequent Feedback	Infrequent Feedback
Part 1: Own (OT)	No social distance	FFT-O	IFT-O
Part 2: Stranger(ST)	High social distance	FFT-S	IFT-S
Part 3: Friend (FT)	Low social distance	FFT-F	IFT-F

Table 3 Participants and Treatments: Jena (Germany)

	Frequent Feedback	Infrequent Feedback	Total
Sequence	Seq. 1: OT-ST-FT		
Social Distance	Decreasing	Decreasing	-
Session	6	6	12
Participants	130	124	254
Active Participants	65	62	127
% of Male	47.69	45.16	46.02

Table 4 Participants and Treatments: Copenhagen (Denmark)

	Infrequent Feedback				
Sequence	Seq. 1	Seq. 2	Seq. 3	Seq. 4	All
	OT-ST-FT	OT-FT-ST	ST-FT-OT	FT-ST-OT	All
Social Distance	Decreasing	Increasing	Decreasing	Increasing	-
Session	5	4	4	3	16
Participants	52	54	50	50	206
Active Participants	26	27	25	25	103
% of Male	65.38	37.04	20.00	68.00	47.57

Table 5 Results from non-parametric tests

Panel A: Wilcoxon signed-rank tests on the average amount of ECUs put on the lottery			
	FFT+ IFT	FFT	IFT
OT vs (ST+FT)	z= 2.839	z=1.770	z=2.253
	p=0.005	p=0.077	p=0.024
OT vs ST	z= 1.296	z=1.602	z=0.239
	p=0.195	p=0.109	p=0.811
OT vs FT	z= 3.697	z=2.328	z=2.951
	p=0.000	p=0.020	p=0.003
ST vs FT	z= 3.724	z=2.467	z=2.793
	p=0.002	p=0.014	p=0.002
Panel B: Wilcoxon signed-rank tests on the average Proportion of Safe Choices			
	FFT+ IFT	FFT	IFT
OT vs (ST+FT)	z= 3.761	z=3.570	z=1.735
	p=0.000	p=0.000	p=0.083
OT vs ST	z= 1.679	z=2.416	z=0.627
	p=0.093	p=0.016	p=0.531
OT vs FT	z= 4.532	z=3.955	z=2.382
	p=0.000	p=0.000	p=0.017
ST vs FT	z= 4.797	z=3.126	z=3.772
	p=0.000	p=0.002	p=0.000

Note: All test reported are two-sided.

Table 6 ECUs put at risk on the Lottery by Active Participants

	(1)	(2)	(3)	(4)
Estimation Method	Tobit Regression			
Dependent variable	y=ECUs put on the lottery			
Independent variables				
Frequent feedback	-15.553***	-16.733***	-16.739***	-18.682***
	(5.073)	(5.255)	(5.613)	(5.866)
Block 2	2.2749	2.012	1.808	1.373
	(1.754)	(1.810)	(2.341)	(2.483)
Block 3	-6.140**	-4.6737**	-7.563***	-6.126**
	(2.361)	(2.172)	(2.769)	(2.632)
Block 4	-6.270**	-6.015**	-8.604***	-8.655***
	(2.492)	(2.498)	(2.962)	(3.046)
Stranger (ST)	-1.671	-1.726	-	-
	(1.950)	(2.062)		
Friend (FT)	-9.636***	-10.471***	-8.755***	-9.459***
	(2.768)	(2.880)	(2.200)	(2.215)
Male	-5.178	0.755	-3.225	2.511
	(5.217)	(5.166)	(5.739)	(5.583)
SOEP	2.610**	2.820**	2.358*	2.554**
	(1.149)	(1.148)	(1.201)	(1.175)
Age (years)	-	-0.104	-	-0.059
		(0.850)		(1.002)
Study Economics	-	-26.874	-	-20.2664
		(17.053)		(21.069)
Income Class	-	0.633	-	0.958
		(3.120)		(3.424)
Close Friend in Lab	-	-2.180	-	-3.108
		(7.040)		(7.953)
Trait Emotional Intelligence	-	-2.317	-	-4.515
(TEIQue)		(3.627)		(3.996)
(TIPI) Extraversion	-	4.970**	-	5.594**
		(2.018)		(2.159)
Beliefs SOEP	-	-	1.858	2.146
Passive Participant			(1.300)	(1.389)
Constant	23.929***	12.950	15.471*	10.119
	(7.226)	(31.624)	(8.555)	(36.526)
N	4572	4248	3048	2832
N Subject	127	118	127	118
Log likelihood	-16382.385	-15050.116	-10629.84	-9755.952
F	5.42***	3.94***	5.01***	4.02***
Pseudo R2	0.010	0.018	0.011	0.020
Left-censored obs. at y=0	1447	1361	1038	976
Uncensored obs.	2910	2700	1863	1729
Right-censored obs. at y=100	215	187	147	127
Part	1,2, 3	1,2, 3	2, 3	2,3
Sequence	OT-ST-FT	OT-ST-FT	OT-ST-FT	OT-ST-FT
Location	Jena	Jena	Jena	Jena

Note: Standard errors adjusted for clusters in subjects are reported in parenthesis.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 7 Order Effects: Increase and Decrease in Social Distance

Panel A: Average amount of ECUs put on the lottery (Standard deviation in parenthesis)			
	OT	ST	FT
Decrease in SD			
seq. 1: OT-ST-FT	33.41	34.85	32.16
seq. 3: ST-FT-OT	(21.62)	(23.29)	(23.51)
Increase in SD			
seq. 2: OT-FT-ST	37.50	37.77	40.35
seq. 4: FT-ST-OT	(25.38)	(30.68)	(27.70)

Panel B: Average Proportion of Safe Choices (Standard deviation in parenthesis)			
	OT	ST	FT
Decrease in SD			
seq. 1: OT-ST-FT	0.163	0.056	0.061
seq. 3: ST-FT-OT	(0.31)	(0.12)	(0.13)
Increase in SD			
seq. 2: OT-FT-ST	0.220	0.082	0.058
seq. 4: FT-ST-OT	(0.34)	(0.13)	(0.11)

Table 8 Strength of friendship and average amount of ECUs put on the lottery, Standard deviation in parenthesis.

	OT	ST	FT
Decrease in SD			
Close friend in the lab	28.70	31.15	25.18
(N=27/47)	(22.92)	(24.57)	(22.79)
Non-close friend in the lab	39.32	41.10	40.10
(N=20/47)	(20.57)	(22.90)	(23.09)
MWT	z=1.604	z=1.432	z=2.262
	p=0.109	p=0.152	p=0.024
Increase in SD			
Close friend in the lab	38.46	38.74	41.16
(N=38/52)	(26.68)	(30.06)	(29.57)
Non-close friend in the lab	34.90	35.14	38.14
(N=14/52)	(22.18)	(33.32)	(22.67)
MWT	z=0.299	z=0.373	z=0.072
	p=0.765	p=0.709	p=0.942

Table 9 ECUs put at risk on the Lottery by Active Participants

	(1)	(2)	(3)	(4)	(5)	(6)
Estimation Method	Tobit Regression					
Dependent variable	ECUs put on the lottery					
Independent variables						
Block 2	1.416	0.950	0.417	-0.195	-0.470	-0.096
	(1.524)	(1.655)	(1.758)	(1.892)	(2.090)	(3.528)
Block 3	-7.967***	-7.556***	-8.525***	-8.735***	-13.051***	-3.242
	(2.602)	(2.703)	(2.947)	(3.113)	(4.494)	(4.194)
Block 4	-4.301	-4.734	-6.309*	-7.097**	-11.903**	-1.279
	(3.013)	(3.122)	(3.300)	(3.396)	(4.775)	(4.589)
Stranger (ST)	4.409*	3.266	-	-	-	-
	(2.614)	(2.703)				
Friend (FT)	4.170*	3.511	-0.902	-0.416	-4.694**	4.221
	(2.361)	(2.506)	(2.289)	(2.488)	(2.338)	(5.072)
Male	-8.140	-7.134	-7.311	-3.788	-8.041	6.502
	(6.645)	(6.980)	(7.003)	(7.243)	(7.227)	(11.845)
SOEP	2.834**	3.207***	2.665*	3.365***	3.765***	4.001*
	(1.343)	(1.243)	(1.437)	(1.289)	(1.289)	(2.057)
Age	-	0.525	-	0.220	1.564**	-2.025**
		(0.737)		(0.714)	(0.684)	(0.868)
Study Economics	-	-5.763	-	-10.549	-1.856	-34.872**
		(9.336)		(9.134)	(8.818)	(16.099)
Income	-	0.001**	-	0.001*	0.002***	0.000
		(0.000)		(0.000)	(0.001)	(0.000)
Close Friend in Lab	-	-6.971	-	-5.783	-19.420***	30.664**
		(7.631)		(7.866)	(6.933)	(15.094)
Trait Emotional Intelligence	-	-14.391***	-	-15.768***	-15.486***	-17.176*
(TEIQue)		(4.448)		(4.690)	(4.367)	(9.020)
(TIPI) Extraversion	-	3.912	-	4.345*	5.284**	3.839
		(2.573)		(2.566)	(2.134)	(4.229)
Beliefs SOEP	-	1.970	-	1.637	0.768	3.966
Passive Participant		(1.711)		(1.604)	(1.429)	(3.655)
Constant	15.267	52.653*	9.217	57.651*	23.465	87.257
	(11.321)	(30.418)	(13.892)	(33.174)	(32.065)	(55.307)
sigma Constant	39.163***	37.195***	39.297***	36.510***	27.813***	41.493***
	(2.721)	(2.693)	(2.891)	(2.718)	(2.702)	(4.297)
Observations	3564	3168	2376	2112	1128	984
N Subject	99	88	99	88	47	41
Log likelihood	-14201.164	-12525.27	-9569.97	-8446.39	-4426.024	-3831.647
F	2.804***	3.08***	2.84***	3.47***	6.74***	1.81**
Pseudo R2	0.001	0.018	0.010	0.021	0.0596	0.018
Sequence's fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Left-censored obs. at y=0	711	642	438	393	177	216
Uncensored obs.	2589	2316	1749	1575	888	687
Right-censored obs. at y=100	264	210	189	144	63	81
Part	1,2, 3	1,2, 3	2, 3	2,3	2,3	2,3
Sequence	All	All	All	All	OT-ST-FT ST-FT-OT	OT-FT-ST FT-ST-OT
Location	Copenhagen	Copenhagen	Copenhagen	Copenhagen	Copenhagen	Copenhagen

Note: Standard errors adjusted for 127 clusters in subjects are reported in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

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