Trust Is more Stable than Parallel Risk-Taking, and It Is Especially Stable for Females*

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Abstract: The individual willingness to trust is compared to the inclination to take lottery risk in six distinct scenarios, controlling the return distributions. Trust shows significantly smaller responsiveness to return expectations compared to parallel risk-taking, and paired comparisons reveal that the investors sacrifice 5% of the expected payoff to trust anonymous responders. Trust is more calculated and volatile for males, while appearing relatively stable for females. The results connect with evidence regarding physiological differences between trust and risk-taking, in addition suggesting that trust is more of a distinctive trait for females compared to males.

Keyword: Trust; Risk; Gender

JEL classifications: C7, C9, D8

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1. Introduction

Research on trust highlights the joint roles of personality and situational factors in shaping trust decisions (Evans and Revelle, 2008). At the broad personality level, diverse studies show that trust positively links with agreeableness while showing negative correlation with neuroticism (Dohmen et al., 2008; Zhao and Smillie, 2015). Twins studies find 10-40% heritability in trust measures (Weinschenk and Dawes, 2019) and neuroscience research exposes genetic variation in trust (Tolomeo et al., 2020). In specific applications, however, trust is affected by situational factors that interact with individual dispositions (Thielmann and Hilbig, 2015). Economists classify trust as decision under strategic uncertainty, arguing that trustworthiness expectations and personal risk attitudes jointly affect particular trust decisions (Ben-Ner and Putterman, 2001).

This paper presents an incentivized survey-experiment exploring the joint roles of personal dispositions and situational factors in trust decisions. Advanced MBA students (N=110; 56% males; mean age 33) make decisions in six trust games, simplifying the Berg et al. (1995) familiar investment game. The menu of possible return levels is changed between the six conditions to examine the response of individual trust to situational factors. A later section of the questionnaire elicits subjects' beliefs regarding the trustworthiness of randomly chosen trustees, in each of the distinct trust scenarios. The elicited beliefs are then utilized to define pure-chance lotteries with return distributions identical to the subjective assessments that subjects delivered for the trust games. The triadic design thus consists of three components: trust games, belief elicitations, and lottery investment decisions, so that individual trust and risk-taking can be compared across six distinct conditions, controlling the return distributions.

In particular, the six conditions design is implemented to compare the responsiveness of parallel trust and risk-taking to return expectations. The change in the rules of the trust games, across the six conditions, modifies the trustors' expectations regarding the return on the amount transferred to the trustee. These changes induce parallel shifts in the returns on the risky lotteries. If trust is a distinctive stable individual trait, then the responsiveness of trust to changes in trustworthiness expectations may be weaker than the responsiveness of risk-taking decisions to parallel changes in the return distributions. Trust would appear more stable relatively to comparable risk-taking.

The triadic design is also utilized to test for gender differences in paired trust and risk-taking decisions. While the literature commonly agrees that males are more receptive to financial risk compared to females (Charness and Gneezy, 2012a), studies of gender differences in trust bring mixed findings (Croson and Gneezy, 2009; Van Den Akker et al., 2018). The current study approaches the possibility of gender differences in risk-taking and trust from a different angle, testing if male and female MBAs differ in their responsiveness to shifts in the rules of the trust games and parallel changes in the returns on risky lotteries.

The results in brief confirm that trust is more stable than comparable risk-taking, for males and for females. Panel regressions roughly suggest the effect of change in the expected return on trust is about half smaller than the effect on comparable risk-taking. Moreover, the responsiveness of females' trust to expected returns is about half smaller than the responsiveness of males. This and other results, such as a significant correlation between an auxiliary (outside the triadic design) risk preference measure with the trust of males, but not with the trust of females, suggest that trust is more of a distinctive trait for females while it is more calculative and situation-specific for males.

The paper proceeds with a focused literature review and hypotheses development (Section 2). Sections 3-4 explain the survey design and the statistical method of the paper. Sections 5-6 present the results and Section 7 concludes with further discussion.

2. Literature Review and Hypotheses

In Berg et al. (1995) two-stage trust game, the trustor selects an investment X which triples to 3X when transferred to the trustee. The trustee then decides on the return Y ($0 \leq Y \leq 3X$) that would be paid back to the trustor for making the investment. If both players are endowed with 100, the final balance of the investor is 100-X+Y, while the receiver ends with 100+3X-Y.

Part of the vast interest in the trust game follows from the large distance between the grim equilibrium solution and typical experimental results. In equilibrium, the self-regarding trustee always keeps the tripled transfer, so the rational trustor does not invest. Johnson and Mislin (2011) meta-analysis of more than 150 experiments contrarily reveals mean investment of about 50% of the endowment, with payback ratio close to 37% of the amount received.

The complementary effects of dispositional inclinations and situational factors on trust show in diverse studies utilizing the Berg at al. (1995) game. Cesarini et al. (2008) use twin methodologies to approximate the genetic component in trustors' transfers. The heritability estimates are 20% for a large Swedish sample and 10% for a comparable US sample. Müller and Schwieren (2020) reconfirm that trustors' investments increase with agreeableness while decreasing with neuroticism. The role of situational factors shows in various studies of context and framing effects on trustors' investments (e.g., Greifeneder et al., 2011; Fiedler and Haruvy, 2017). The trustor's expectations regarding the return on trust emerges as a major determinant of particular trust decisions in dozens of diverse studies (e.g., Ashraf et al., 2006; Chang et al., 2010; Fetchenhauer and Dunning, 2012; Sapienza et al., 2013). Costa-Gomes et al. (2014) show causality of return expectations on trust using an instrumental variables approach.

Comparisons of parallel trust and risk-taking decisions are first reported in Houser et al. (2010) that compare the trust game investments of subjects that receive information on the returns in a preceding experiment (social history), to the investments of distinct subjects in a lottery with an identical return distribution. The investment amounts do not differ significantly between the trust and lottery groups, but the trust game investments are less clustered compared to the parallel lottery investments. Fetchenhauer and Dunning (2012; henceforth FD12), closer to the interest of the current study, compare the response of two groups of trustors to dissimilar information regarding the distribution of returns. One group plays the trust game with relatively generous trustees, while the other plays the game with egocentric responders. The trust levels of the subjects with good return prospects significantly exceeds the trust of subjects with poor return chances. The difference increases when the second player is eliminated and the tasks are framed as risk-taking problems.[1] The current survey-experiment extends the FD12 framework, collecting six parallel trust and risk-taking decisions from each subject and comparing the responsiveness of trust and risk-taking to subjective return expectations. Hypothesis 1 predicts that trust would show smaller responsiveness to expected returns within our six scenarios triadic design.

[1] In FD12 the trustor (A) selects between keeping an endowment of $5 or passing the amount to the trustee (B). If A transfers, the $5 is quadrupled to $20 and B chooses between keeping the $20 or passing $10 to A. Subjects are informed that there is 80% (46%) probability that their trust will be reciprocated. In the risk task the same subjects decide on whether to invest the $5 in a lottery that pays $10 with probability 80% (46%). The investment rates are 70% (54.3%) in the trust games vs. 77.5% (28.6%) in the risk tasks.

H1: Trust shows smaller responsiveness to return expectations, compared to the parallel risk taking.

Our second hypothesis relates to possible gender differences in the paired trust-risk decisions. While the literature typically agrees that females take less financial risk than males (Charness and Gneezy, 2012a; Marinelli et al., 2017; Brooks et al., 2019), the evidence regarding gender, trust, and trustworthiness is mixed. Several papers propose that males invest more than females but females are more trustworthy (Croson and Gneezy, 2009), but one or both of these findings are contradicted in other studies (see Van Den Akker et al., 2018 meta-analysis). The mixed results motivate the neutral framing of the next hypothesis regarding gender differences.

H2: Females exhibit stronger risk aversion in the lottery allocation tasks, but there are no gender differences in trust. Responsiveness to expected returns is not affected by gender.

Beyond controlling for the expected return, trust game studies often account for personal risk attitudes using customized risk preference measures. Risk aversion is expected to negatively affect the risky trust decisions, but the results of the empirical tests are mixed. Diverse studies utilizing the Holt and Laury (2002) risk aversion measure (henceforth: HL) report insignificant correlations between HL and trust (Eckel and Wilson, 2004; Houser et al., 2010; Lönnqvist et al., 2015; Corgnet et al., 2016). Houser et al. (2010), in particular, find that subjects that classify as risk-seeking by HL take more lottery risk than others, but the HL measure does not link with the trust decisions of the subjects playing the comparable (social history) trust game. Other studies, however, confirm the intuitive link between risk aversion and trust. Butler et al. (2016) find significant negative correlation between HL and the trust of 350 subjects. Negative correlations also emerged when the risk task was structured similarly to the trust game (Schechter, 2007), when a 15-points scale was used to characterize personal risk attitude (Sapienza et al., 2013), and when subjects ranked their inclination to take risk in 0-10 ordinal scale (Lönnqvist et al., 2015). We avoid verbal risk attitude statements in the current study, suspecting that these may affect (or be affected by) choices in other parts of the questionnaire. Alternatively, we utilize the lottery choice task of Weinstock and Sonsino (2014) that proved successful in terms of showing strong predictive power for forecast optimism. In line with the Houser et al. (2010) results for HL, the next hypothesis predicts that the auxiliary measure would show stronger predictive power for the (closer domain) risk-taking decisions.

H3: The auxiliary risk preference measure correlates more strongly with the lottery allocations, compared to the trust games' investments, of the males and the females.

3. The Questionnaire Design

3.1: General method

The questionnaire was approved by the ethic committee at the college and distributed in MBA classes between May 2014 and March 2015. The procedure of the experiment and the different tasks were verbally presented by the experimenter without exposing the idea of the triadic design, and the subjects completed a short comprehension quiz. The survey's booklet was divided into short chapters, with task-specific instructions preceding each chapter (Web supplement A). All the tasks were denominated in experimental currency units and one task (henceforth: the payment task) was randomly selected to derive the participation bonus. To simplify the instructions, the conversion rate of currency units to participation fees was not announced in advance. The instructions explained that the expected bonus is 80-100 NIS, with the individual payments ranging between 20 and 200 depending on choices and luck.[2] The date and place of drawing the payment tasks were announced in advance and the participants were invited to supervise the draws. The questionnaire was anonymous and the payments were announced by email, using id numbers to identify the subjects. We used two versions of the questionnaire, counterbalancing the order of tasks within chapters, but keeping the chapters' order fixed. Order did not affect the responses and the results are reported for the complete sample of N=110 MBAs (62 males and 48 females). The main chapters of the questionnaire are described next.

3.2: Trust games with binary return possibilities

We use a simultaneous version of Berg et al. (1995) investment game where the trustor chooses an investment $0 \leq X \leq 100K$ and the trustee concurrently selects between low and high proportional return Y of X. Both players are initially endowed with 100K and the investment X is tripled at the transfer. The return on investment is negative when the trustee selects the low return level (henceforth: LRL), but turns positive when the high return level (HRL) is chosen. The instructions adopted a neutral frame, using A and B to address the two players, and telling subjects that they would be randomly matched with students from a distinct class of undergrad or grad students, majoring in business or other topic, from the same college or a different academic institute. The matching with anonymous partners from a loosely identified

[2] The US$ (Euro) were traded at 3.5 (4.75) NIS around the experiment.

pool increases the social distance between players. As trust and other-regarding concerns diminish with social distance (e.g., Charness et al., 2007; Strombach et al., 2014), our design tests if trust differs from risk-taking in settings where the two decisions have relatively strong chances to coincide.[3]

In particular, chapter 1 of the questionnaire consisted of five binary-return trust games: the four games that emerge when LRL ∈ {0.15, 0.9} and HRL ∈ {1.35, 1.8}, and a filler game with LRL=0.75 and HRL=1.2. Each of the five games was presented in a separate page and page-turning or note-taking were forbidden. Figure 1a presents the 0.9-1.8 condition. The possible return levels are denominated in terms of the tripled amount (3X) and the transfer (X) in parallel; e.g., LRL=0.9 is described as "*return of 30% (of 3X) = 0.9X*". The participants first select an investment level, assuming they are assigned to player A's role, and then choose a return level assuming they play the role of player B. The instructions emphasized that since the payment task is randomly drawn, only one of the decisions may actually determine the participation fee. To verify comprehension, subjects calculated the final balance of the two players in some hypothetical scenario and the experimenter assisted the few students with difficulties.

3.3: Belief elicitation

As part of the triadic design, we elicit subjects' beliefs regarding the likelihoods of low and high returns. Beliefs were elicited in a later chapter of the questionnaire, with an intermediate chapter separating the belief elicitations from the trust games. Again, the subjects were faced with the four games that emerge when LRL ∈ {0.15, 0.9} and HRL ∈ {1.35, 1.8}, as well as a filler game with LRL=0.15 and HRL=1.05. Figure 1b presents the 0.9-1.8 assignment. The participants fill-in the likelihood that they assign to each return level and then copy one of the assessments, marked by the letter Q, to a supplementary page that was distributed with the main questionnaire. The extra page presented a table with five capital letters in one column and an empty second column where subjects inserted the designated probability assessments.[4] The table was utilized later to construct the lotteries that match the trust games. The filler problems were included to mask the link between the parallel tasks, and the filler return levels were modified between chapters to enhance the masking (cf., Charness et al., 2012b discussion of

[3] The large distance between players may also reduce the effect of betrayal aversion (Bohnet and Zeckhauser, 2004) on trust. Indeed (similarly to FD12), our results do not support the hypothesis that betrayal aversion decreases the willingness to trust compared to parallel willingness to take risk.

[4] The copied probabilities referred to LRL (HRL) in 2 (3) conditions.

within subject designs). A standard quadratic scoring rule was used to incentivize the belief elicitations.

3.4: Lottery allocations

The 0.9-1.8 lottery allocation task is presented in Figure 1c. Subjects are requested to copy the value of Q from their supplementary page and choose an investment level 0≤X≤100K assuming the investment may bring 0.9X or 1.8X with probabilities Q and 100-Q. While the procedure of connecting the trust game beliefs to the lottery allocation tasks could be run more smoothly in a computerized experiment, we chose to run in-class sessions in order to approach MBA students that would not show to discretionary laboratory sessions. The lottery allocation tasks were presented in a separate chapter, and the filler parameters were modified again (LRL=0.45; HRL=1.5). In addition to the five binary-return lotteries ({0.15, 0.9} X {1.35, 1.8} and the filler), subjects chose their investment levels in two four-outcome lotteries that were presented before the respective trust games (reversed-order). The flow of tasks in the main and reversed-order conditions is contrasted in Figure 2. The reversed-order conditions are discussed next.

3.5: Games with fixed return distributions

To be able to present some lottery allocation tasks before the respective trust games we have run an introductory short experiment in an undergraduate finance class, asking the students to make decision in two simultaneous trust games where player B selects between four distinct return levels (our approach here is similar to FD12). The possible return levels were 0.45X, 0.75X, 1.35X, 1.65X in one game (henceforth addressed as 0.45-1.65), compared to 0.15X, 0.45X, 1.65X, 1.95X in the other (0.15-1.95). The method of the introductory experiment was similar to the one of the main experiment. The subjects were requested to make decisions as player A and B, assuming their partner would be randomly selected from a distinct class and the roles would be randomly assigned to derive the participation fees. The choices of the undergraduate students as player B were used to define the main experiment reversed-order assignments. In game 0.15-1.95, for example, 16% of the undergraduate students chose the 0.15X return level; 24% choose the 0.45X; 52% choose 1.65X and the remaining 8% choose 1.95X. These proportions were used to define the main experiment 0.15-1.95 assignments as presented in Figure 3. The instructions for the reversed-order trust games emphasized that these games would be played with students from a distinct experiment whose choices were collected in advance. The return distribution was disclosed as part of the game description, and the participants submitted their investment decisions but were not requested to select a return level. The two games were presented at the last chapter of the booklet, together with two of the binary-return games that were presented again to test for consistency (see Web supplement B for the results).

< Insert Table I >

3.6: The auxiliary risk preference task

To obtain an estimate of subjects' risk attitudes outside the triadic design, we use the (gain-domain) task of Weinstock and Sonsino (2014) as presented at the left panel of Table I. The task consists of five binary choices between riskier and safer heads-or-tails lotteries. In GAINS1, for example, the subject selects between a riskier lottery that pays 1000 or 200 and a safer lottery that pays 700 or 600. The premium for taking risk, defined as the difference between the expected return on the risky lottery and the expected return on the safe lottery, is negative -50 in this case. Along the table, the premium increases with the index number of the problem, reaching +300 in GAINS5. In the 2014 paper, the proportion of risk averse choices decreases with the index number of the problem and the overall proportion of risk averse choices (ignoring GAINS1) shows 0.47 ($p<0.01$) correlation with the forecast optimism of 75 subjects.

4. Notation and Statistical Method

Table II introduces some notation to simplify the discussion of results. The abbreviations INV and LOT are used to represent the trust game investments and the respective lottery allocations. The variables are presented in K units, so that investment of 50,000 is shortened to 50 or 50K. The variable R is used for the selected return level (LRL or HRL), with %(HRL) denoting the proportion of subjects choosing high return. P(HRL) denotes the likelihood assigned to high return, and E(R) is the expected return on investment as derived from P(HRL). Subscript 6 is used to represent averages across the six conditions; e.g., LOT_6 is the average investment in the six lotteries (the filler is always ignored). The subscript 4 is similarly used for the four conditions with binary returns. $\sigma(Z)$ is the standard deviation of Z, and $\rho(Z1,Z2)$ is the Pearson correlation between Z1 and Z2. Statistical tests are run on individual averages where applicable; e.g., to compare the LRL=0.15 and LRL=0.9 trust levels, we subtract the average INV in the two 0.15 games from the average INV in the two 0.9 games and apply the test to the paired differences. A sign-test is used for testing one-sample hypotheses and the Pitman test is used for between-sample comparisons. We always report 2-tails significance, using ** for $p<0.01$ and * for $p<0.05$.

< Insert Table II >

5. General Results

5.1: The trust decisions

On average, the levels of trust in the current experiment are close to those observed in experiments with dynamic trust games, although belief in conditional reciprocity cannot motive trustors when decisions are simultaneous.[5] The mean investment in the six games (INV_6) was 47 with standard deviation 19.6, and the hypothesis that subjects invest half of the endowments could not be rejected (p=0.63).

Column (a) of Table III however shows that the levels of investment strongly differed between games. The mean investment in the games with low return level of 0.15 was 35 compared to mean investment of 57 in the LRL=0.9 games, and only 20 participants showed stronger willingness to trust when LRL=0.15 (sign-test of the equality of investments at the 0.15 and 0.9 games; p<0.01). When the expected return on investment is derived from the likelihood that each subject assigned to high and low return, the average expected return is 1.19 for the games with LRL=0.9 compared to 0.76 for the games with LRL=0.15 (Column (b) of Table III). Sign-tests confirm that subjects expected significant losses in each of the 0.15 games, while expecting significant gains in the games with LRL=0.9 (p<0.01 in all 4 tests). The strong decrease in investments when LRL=0.15 therefore suits the shift in expectations.

< Insert Table III >

The impact of HRL on trust, however, was weaker. On average, the HRL=1.8 investments were only 2K larger than the HRL=1.35 investments and repeated measures analysis confirmed that neither HRL nor the interaction between LRL and HRL affected investments (Web supplement D). The mean expected return, however, increased from 0.71 to 0.81 (p=0.12) in the structural shift from 0.15-1.35 to 0.15-1.8, while increasing from 1.11 to 1.26 (p<0.01) in the move from 0.9-1.35 to 0.9-1.8. The weak response to HRL illustrates that trust shows limited adaptivity to expectations. The restricted responsiveness would surface again at the next sections.

[5] In dynamic setting, investment of large X may follow from the belief that X is essential for generous return.

5.2: Trustees decisions in the binary-return games

We now turn to the subjects' decisions at the trustee's role. Over all four games, LRL was selected more frequently than HRL (58% vs. 42%), but equality could not be rejected (N=52 subjects with %(HRL)<50%; N=35 with %(HRL)>50%; p=0.09). About 1/3 of the subjects (N=37) chose the low return level in all four games, while only 1/6 (N=19) always chose the high return level. On average, the trustees returned 0.96 of the transfer which represents 0.32 of the tripled amount.

Column (c) of Table III compares the frequency of generous (HRL) return across games. Unsurprisingly, the high return is selected less frequently when HRL=1.8 compared to the games with HRL=1.35 (36% compared to 48%, p<0.01). Since the trustee pays back 60% of the tripled transfer when HRL=1.8, compared to 45% when HRL=1.35, the lower generosity at the 1.8 games may represent aversion to disadvantageous split of the tripled transfer. As the trustee brings a loss of 85% to the trustor when choosing LRL=0.15, compared to loss of only 10% when LRL=0.9, other-regarding considerations could oppositely bring increased generosity in the LRL=0.15 games compared to the 0.9 games. The differences here however are smaller and do not reach significance (mean generosity 39% in the games with LRL=0.9 compared to 45% in the games with LRL=0.15; p=0.29).

< Insert Table IV >

To understand the return patterns more closely we run cluster analysis on the four binary return decisions. Table IV shows the bottom-line results for five clusters (R^2=0.74). Cluster C1 is the largest, counting 50 participants. The subjects in this group can be classified as egocentric or lacking other-regarding concerns as they almost always choose the LRL.[6] In particular, this group includes the 37 subjects that chose the low return level in all four games. Cluster C2 (N=24) contrarily contains the altruistic or highly trustworthy types that chose the HRL constantly. Clusters C3 and C4 are smaller, counting 15 and 14 participants. The subjects in C3 show signs of egalitarian preferences, as they always choose the close to equal (45% to A, 55% to B) split of the tripled transfer when such a split is possible. The 14 subjects in C4 alternatively show preference for almost-fair reciprocation, as they always choose the 0.9

[6] Interestingly, the subjects in C1 still show close to average investments (mean INV of 50 in the 0.9 games and 28 in the 0.15 games), similarly to the "inconsistent trusters" of Chaudhuri et al. 2003.

return where possible. Finally, the few subjects in C5 (N=7) are 100% generous when LRL=0.9, but show tendency to pay back only 5% when possible.

5.3: The lottery allocations

Returning to Table III, column (f) presents the mean lottery allocation in each condition, and column (g) reports the results of testing the equality INV=LOT. First glance at the statistics does not reveal consistent differences between the paired investments. The mean INV and LOT are almost equal in five of the six conditions. The lottery allocations are smaller at 0.15-1.8 ($p<0.02$), but the differences diminish when the most pessimistic subjects are ignored (mean INV 39 vs. mean LOT 35 for the 92 subjects with E(R)>0.25; p=0.24). The correlations between INV and LOT are positive, but far from perfect, ranging between 0.11 and 0.39.

Closer look at the joint distributions however shows that INV exhibits a regressive pattern relatively to LOT, as the subjects trust more than they risk when their lottery allocations are relatively small, while trusting less than risking when their lottery allocations are larger. At 0.9-1.35, for example, the correlation between INV and LOT is 0.25 ($p<0.01$), but a median split reveals that the subjects with smaller lottery allocations invested almost 70% more in the trust game (mean LOT 29 compared to mean INV 49; N=55; $p<0.01$), while the subjects with larger lottery allocations invested about 30% less in the trust game (mean LOT 89 compared to mean INV 65; N=55; $p<0.01$). Similar patterns emerge in all other games, including the two reversed-order games with fixed return distributions. When the sample is median split by the average LOT in these two games, the subjects with larger lottery allocations show mean INV 61 compared to mean LOT 71 (N=54; INV=LOT rejected at $p<0.01$), while the subjects with smaller lottery allocations show mean INV 37 compared to mean LOT 30 (N=47; p=0.02).[7]

5.4: Trust shows smaller responsiveness to expected returns

The regressive patten of INV relatively to LOT appear to suit the hypothesis that trust shows smaller responsiveness to the expected returns compared to the lottery allocations (H1). Indeed, panel fixed-effects Tobit regressions, taking into account the possible censoring of the investments at 0 or 100K, reveal about twice stronger effect of E(R) on the lottery allocations. The mean marginal effect of E(R) on the lottery allocations is 0.49 compared to mean marginal effect of 0.24 on the trust games' investments (see appendix Table A.1 for details). The regressions thus roughly suggest that 10 percentile points increase in the expected return (say,

[7] Non-surprisingly the trust-risk differences are somewhat weaker for these games. The equality $\sigma(INV) = \sigma(LOT)$ could not be rejected: p=0.11 for 0.15-1.95; p=0.26 for 0.45-1.95.

from 0.95 to 1.05) increase the lottery allocations by 4.9K, while increasing the trust games' investments by only 2.4K. Equality of the E(R) effects on INV and LOT is easily rejected ($p<0.01$ in a likelihood ratio test). The results are robust and similar differences in the responsiveness of LOT and INV to the expected returns emerge in various alternative estimations (see model (b) of appendix Table A.1 for an example). The smaller responsiveness of the lottery allocations to the expected returns also reflects in lower volatility of the LOT investments across the six conditions. When the standard deviation of the six trust game investments and the six lottery allocations is separately calculated for each subject (using subscripts 6 again for the six conditions' statistics), the mean $\sigma_6(\mathrm{INV})$ is 21.2 compared to mean $\sigma_6(\mathrm{LOT})$ of 26.6. Paired comparisons reveal $\sigma_6(\mathrm{LOT}) > \sigma_6(\mathrm{INV})$ for 76 subjects while $\sigma_6(\mathrm{LOT}) < \sigma_6(\mathrm{INV})$ for only 31, confirming that INV shows lower volatility at the individual level ($p<0.01$).

5.5: Is it other-regarding concern that stabilizes trust?

The lower volatility of trust could follow from altruistic concerns of the trustor. To illustrate the intuition, note that other-regarding trustors would recognize that the trustee is expected to gain 3-E(R) when their expected return is E(R). Assuming linearity for simplicity, let $\mathrm{INV} = \mathrm{a} + \mathrm{b} \cdot \mathrm{E(R)} + \mathrm{c} \cdot \left(3 - \mathrm{E(R)}\right)$ represent an investment model where the trustor responds to expected returns, but also takes into account the residual return to the trustee. Assuming $c < b$ since self-interest is stronger than altruism, the effective slope of INV with respect to E(R) is $(\mathrm{b} - \mathrm{c})$. If the lottery allocation decisions take the simpler form $\mathrm{LOT} = \mathrm{a}' + \mathrm{b} \cdot \mathrm{E(R)}$, then the responsiveness of INV to the expected returns would be smaller because of the moderating effect of altruistic concerns. However, recall that 37 subjects always chose the low return level at the trustees' role. It is reasonable to assume that altruism does not affect the investment decisions of these subjects (c=0), so altruism cannot explain smaller responsiveness of trust to the expected returns in this sub-sample. However, the mean $\sigma_6(\mathrm{INV})$ of the subjects in this group is 20.5 compared to mean $\sigma_6(\mathrm{LOT})$ 29.2, and equality is easily rejected as $\sigma_6(\mathrm{INV}) < \sigma_6(\mathrm{LOT})$ for 29 of these 37 subjects ($p<0.01$). Table IV moreover illustrates that $\sigma_6(\mathrm{INV}) < \sigma_6(\mathrm{LOT})$ on average in all five clusters, suggesting that the smaller volatility of trust does not relate to differences in other-regarding preferences.

5.6: The price of trust in terms of reduced expected return

Intuitively, we suspect that the smaller responsiveness of trust to expected returns may be costly, since subjects trust too much when the expected return is unattractive while trusting too little when the return prospects are appealing. To check this intuition we calculate the expected payoff on each trust decision using the formula (100-INV)+INV·E(R), and use the four binary-return games average as measure of the "*expected payoff on trust*". The expected payoffs on each lottery allocation is similarly derived using the formula (100-LOT)+LOT·E(R), and the four conditions average is used again to measure the "*expected payoff on risk-taking*". The (mean) expected payoff on trust, by these calculations, is 102.6 compared to mean expected payoff of 108.2 on risk-taking. Paired comparisons reveal that 88 subjects expect larger payoff on risk-taking, while only 17 subjects exhibit the opposite ranking ($p<0.01$). By way of interpretation, the comparison suggests that the subjects sacrifice about 5% of the return that they expect to collect in the lottery assignments, when the tasks are framed as trust games. The smaller adaptivity of trust is expensive in terms of expected payoffs.[8]

< Insert Table V >

6. Gender Differences

Before discussing the gender differences in the parallel trust and lottery investment tasks, we return to Table I to test if the female MBAs show stronger risk aversion than the male MBAs in the auxiliary risk preference task. The right columns of the table indeed show that the risk aversion rates of the females are larger than those of the males in all five problems. The overall risk aversion rate is 54% for the males compared to 68% for the females and equality is rejected at $p<0.01$. The results for the auxiliary task thus match the preceding evidence for stronger risk aversion of females in choice between objective probability lotteries (Croson and Gneezy, 2009). [9]

The remainder of this section summarize the results of a comprehensive analysis of the gender differences in trust and lottery risk-taking, controlling for the auxiliary risk preference measure. The results are grouped into four observations. RA_G is used for the proportion of risk-averse choices at GAINS2-GAINS5 (including GAINS1 slightly weakens the correlations).

[8] The difference is smaller when the comparison is run on all six games (105.1 vs. 109; $p<0.01$). Note also that when the trust game payoffs are calculated assuming the mean return rates R (e.g., (100-INV)+INV·1.11 at 0.9-1.35), the mean trust game payoffs fall further to 100.4 (103.6 on all six games). The additional decrease follows from the lower than expected return rates at 0.9-1.8.

[9] Following Weinstock and Sonsino (2014) the questionnaire also presented five loss-domain choice problems. The gender differences weaken in the loss-domain (61% risk averse choices for males; 67% for females; $p=0.28$), and the loss-domain risk preference measures do not correlate with the triadic design variables of interest.

Observation 1: *The trust game investments of the males and the females are similar, but the males' trust responsiveness to expected returns is significantly stronger.*

At first glance, the trust of males and females appears similar. The mean INV_6 is about 47 for both genders (Table V), and closer look shows that equality cannot be rejected for all six games. The females were slightly more pessimistic regarding trustworthiness (mean average expected return 0.94, compared to 1.0 for the males; p=0.25), but again equality cannot be rejected for all the relevant (binary-return) games. The investments of the males however strongly increase with the expected return, while the investments of the females appear more stable. When the six games are individually sorted by the expected return, the mean investment of the males in the three games with larger E(R) is about 54 compared to mean investment of 40 in the three games with smaller E(R) ($p<0.01$ by a sign-test on the paired differences). The difference in means is about 40% smaller for the females (mean investments 51 and 43; p=0.04).[10] Panel regressions of the investments on the expected returns suggest that an increase of 10 percentile points in the expected return increases the trust game investments of the males by 2.9K while increasing the INVs of females by 1.5K (see model (a) of appendix Table A.2 for details). The equality of the E(R) regression coefficients for males and for females is easily rejected in a likelihood ratio test (Chi-square=10.4; $p<0.01$).[11] The difference also reflects in larger volatility of the males' investments across the six conditions. The mean $\sigma_6(INV)$ is 24 for the males compared to 1/3 smaller 18 for the females ($p<0.01$). The trust game' investments of the males, in conclusion, appear more calculated and expectations-based compared to the more stable investments of the females.

Observation 2: *RA_G negatively correlates with males' trust, but does not link with females' trust. The risk seeking males accordingly show the highest levels of trust.*

Analysis of the correlation between RA_G and the trust games investments again reveals a robust difference between the results for males and females. The disparity clearly shows at the average six-games level. The correlation between RA_G and INV_6 is negative -0.33 ($p<0.01$) for the

[10] The mean E(R) in the respective samples are similar: 1.29 vs. 0.84 for the males compared to 1.24 vs. 0.82 for the females.

[11] The stronger responsiveness of males to expected trustworthiness also shows across the samples. The correlation between INV_4 and $E(R)_4$ is 0.37 ($p<0.01$) for the males but close to zero 0.0003 for the females. The correlations between INV_6 and $E(R)_6$ are 0.27 ($p<0.01$) and -0.03, respectively.

males, compared to insignificant -0.07 ($p=0.62$) for the females. The mean investment of the N=41 risk seeking males ($RA_G \leq 0.5$) is about 51 compared to 39 for the N=21 relatively risk-averse ($p<0.05$). The respective means for the females are 48 and 46 ($p=0.8$). The difference also shows in panel Tobit regressions of INV on E(R) and RA_G (see model (b) in appendix Table A.2). The RA_G coefficient is negative -31.8 and highly significant (T=-4.8) for the males, but clearly insignificant -3.5 (T=-0.5) for the females.[12] The predictive power of risk preference measures derived from customized choice between lotteries tasks for risk-taking in other settings has been debated in Lönnqvist et al. (2015), Galizzi et al. (2016), Gürdal et al. (2017) and others. The results here suggest that controlling for gender is essential in such discussions.

<u>Observation 3:</u> *The males' lottery allocations exceed those of the females (beyond RA_G), especially in the conditions where the lotteries are relatively attractive.*

The smaller risk aversion of males shows clearly in the lottery allocation assignments. The mean LOT_6 of the males is 51 compared to 42 for the females ($p=0.02$) and the allocations of the males exceed those of the females in all six conditions. The mean LOT_6 of the N=18 males with $RA_G=0.5$ is 56 compared to 46 for the N=17 females with the same RA_G ($p<0.05$). The respective figures for the 16 males and 14 females with $RA_G=0.75$ are 52 and 35 ($p=0.06$). Closer examination however reveals that the difference mainly follows from larger investments of the males in relatively attractive lotteries. When the expected return on investment is divided by the standard deviation to obtain the Sharpe ratio, the average ratios exceed 3.3 in three cases (0.9-1.35, 0.9-1.8, 0.45-1.65), but fall below 1.7 in the other three conditions (0.15-1.35, 0.15-1.8, 0.15-1.95). The equality of the males and females LOT is rejected for each of the relatively attractive lotteries, but cannot be rejected for any of the less attractive lotteries.[13]

< Insert Table VI >

[12] RA_G did not interact with the E(R) of males or females. Web supplement F contrasts the INV, LOT and E(R) of males and females in each game, controlling for RA_G.

[13] The mean investment of the males in the three attractive lotteries is 64 compared to 51 for the females ($p<0.01$). The statistics for the three unattractive lotteries are 39 and 32 ($p=0.19$).

Observation 4: *The males' and the females' responsiveness to expected returns is significantly stronger in the lottery allocation tasks compared to the trust games, but the males' responsiveness to expected returns is stronger in both type of tasks.*

To directly illustrate the stronger responsiveness of the lottery allocations to the expected returns, we utilize the individual splits of the six conditions between those with smaller and larger expected return (as in the discussion of observation 1). Table VI shows that the increase in LOT is more than twice larger than the increase in INV, for the males and for the females and, in addition, the differences for the males are more than 50% larger than the differences for the females.[14] Panel Tobit regressions of the lottery allocations on the expected returns roughly suggest that an increase of 10 percentile points in the expected return increases the lottery allocations of the males by approximately 5.3K, while increasing the lottery allocations of the females by 4.1K (see model (a) of appendix Table A.3). The equality of the E(R) regression coefficients for males and females is clearly rejected in a likelihood ratio test (chi-square=21.7; $p<0.01$). Again, the stronger responsiveness of males to the expected returns reflects in higher volatility of the investments across the six conditions. The mean σ_6(LOT) is 29 for the males compared to 24 for the females ($p<0.05$). Panel regressions of the lottery allocations on E(R) and RA_G additionally suggest that the lottery allocations of the males significantly decrease with RA_G (coefficient -28.0; T=-3.7; see model (b) of appendix Table A.3 for details), while the RA_G effect on the lottery allocations of the females does not reach significant (coefficient -11.6; T=-1.7).[15]

Returning to hypotheses H2 and H3, to conclude, our results match the ample evidence regarding stronger risk aversion of females in financial contexts, but we additionally find that females exhibit weaker responsiveness to expected returns in their lottery allocations and their trust games' investments. Surprisingly, our results do not support H3's intuitive prediction for a stronger link between the auxiliary RA_G risk preference measure and the closer domain lottery

[14] The hypothesis that the LOT differences are equal to the INV differences is rejected at $p<0.01$ for the males and for the females. The hypothesis that the differences are equal for males and females is rejected at p=0.04 for LOT but could not be rejected for INV (p=0.10). The stronger responsiveness of LOT to E(R) also shows across the sample. The LOT_4 correlation with $E(R)_4$ is 0.68 for the males and 0.55 for the females, compared to respective INV_4 correlations of 0.37 and 0.0003. Hotelling-Williams tests for dependent correlations reject the equality of the INV_4 and LOT_4 correlations with E(R) at $p<0.01$ for both genders.

[15] The results regarding the RA_G links with LOT are less robust than those concerning the RA_G correlations with INV. The RA_G simple correlation with the LOT_6 is -0.18 (p=0.17) for the males and -0.21 (p=0.15) for the females. Note also that in terms of the price paid for trusting (as defined in Section 5.6), the means are 5.1 for the females compare to 6.0 for the males (p=0.54).

allocations. The auxiliary risk preference measure correlates with the males' investments, but does not correlate with the females' investments.

7. Discussion

Berg et al. (1995) already propose that trust is a primitive predisposition of human decision. Indeed, the literature that has evolved around the trust game shows that genetic variation plays an important role in trust and neuroeconomics studies point at physiological differences between trust and comparable risk-taking (McCabe et al., 2001; Kosfeld et al., 2005; Krueger et al., 2012; Aimone et al., 2014). Studies of trust in specific applications, however, underlie the role of situational factors that interact with dispositional trust dynamically (see Chughtai and Buckley, 2008 for OB related discussion and Utz et al., 2012 for an electronic commerce example). The results of the current study complement the trait-or-state trust literature illustrating that trust responds to institutional shifts in the menus of possible return levels, but its adaptivity is significantly smaller than parallel risk-taking. The trust of males, moreover, strongly responds to the expected returns while females' trust is more stable, and an auxiliary measure of the personal risk aversion shows predictive power for males', but not for females', trust game investments. By way of interpretation, trust appears closer to a stable distinct trait for females, while appearing more calculative and situation-dependent for males (cf., Nishina et al., 2018 evidence for gender differences in the physiology of trust). Gender differences in the responsiveness to expected returns, however, also emerge for the lottery allocations, where diverse tests suggest that the males' responsiveness to the shifts in return distributions across the six conditions is stronger.

The current survey-experiment was not designed to explore the roots of the gender differences in responsiveness to expected returns. The smaller responsiveness of females' trust to the expected returns could follow from stronger altruism (larger *c* coefficients in the illustrative linear model of Section 5.5) of the females compared to the males. However, the trustworthiness of females was not significantly different from the trustworthiness of males (Table III) and the smaller responsiveness of females' trust to the expected returns still shows when the comparison is restricted to the subjects that never chose the high return level or chose it in only one game (mean σ_6(INV) 26 for the N=28 males compared to 16 for the N=24 females with %(HRL)≤25%; p<0.01).[16]

[16] The means are 25 (for N=22 males) vs. 13 (for N=15 females) when the comparison is restricted to the subjects with %(HRL)=0 (p<0.01).

The gender differences in the responsiveness of the lottery allocations to the expected returns is similarly difficult to reconcile. The fact that females invest less than males in all six conditions does not imply that their responsiveness to expected returns must be smaller.[17] An intuitive explanation could build on stronger effort in part of our male subjects or, more generally, stronger need for cognition (NFC) amongst the males in our particular sample of MBAs. Some dual systems studies indeed report that males score higher in NFC compared to females (e.g., Sladek et al., 2010), but the more common result is that NFC is gender neutral (Cacioppo et al., 1996; Bruine de Bruin et al., 2015). Alternatively, information processing studies proposes that females process information more thoroughly while males tend to focus on focal attributes (e.g., Meyers-Levy and Loken, 2015). However, we could not find evidence suggesting that the lower responsiveness of the females' lottery allocations to expected returns can be attributed to increased attention to other features such as the standard deviation of the return distribution (see Web supplement F for details).

Croson and Gneezy (2009) attribute the inconsistent results of experiments testing for gender differences in other-regarding behavior, to stronger sensitivity of the females to subtle details of the design. Our results here, however, propose that when the framing of trust games is fixed except for the menu of possible returns, the males show stronger responsiveness to changes in the admissible return levels compared to the females. The results connect to recent studies proposing that females show more restrain in response to trust violations (Haselhuhn et al., 2015) while males' trust erodes more strongly following a priming of rationality (Chen and Liu, 2017). The significance of the external risk preference measure (RA_G) for the males' investments, but not for the females, additionally illustrate that controlling for gender is essential in methodological search for effective (externally valid) risk attitude assessment tools.

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[17] The shift relatively to males, for example, could be linear so that in terms of the illustrative LOT=a+b*E(R) model of section 5.5, the intercept a is smaller for the more risk averse females but the slopes are similar.

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Table I: The auxiliary risk preference task

Problem	Risky lottery	Safer lottery	Risk premium	%(safe) sample	%(safe) males	%(safe) Females
GAINS1	1000 or 200	700 or 600	-50	86%	82%	92%
GAINS2	900 or 100	550 or 450	0	77%	73%	83%
GAINS3	900 or 0	400 or 350	+75	79%	69%	92%
GAINS4	1000 or 250	550 or 400	+150	41%	34%	50%
GAINS5	1000 or 100	300 or 200	+300	17%	11%	25%
Risk aversion	-	-	-	60%	54%	68%

Notes: The instructions introduced the lotteries as paying the high or low price depending on the results of tossing a fair coin. Risk premium is the difference in expected payoffs (risky lottery minus safe lottery); %(safe) is the proportion choosing the safe lottery. Risk aversion is the proportion of risk averse choices in all five problems.

<u>Table II: Notation</u>

Symbol	Description	Scale / range
INV	The amount invested by the trustor	0-100 (in K units)
LOT	The amount allocated to the lottery	0-100 (in K units)
R	The return selected by the trustee	LRL or HRL
%(HRL)	The proportion choosing HRL as trustees	0-100%
P(HRL)	The likelihood assigned to high return	0-100%
E(R)	The expected return on investment	P(HRL)*HRL+(100%-P(HRL))*LRL

<u>Notes:</u> The variables R, %(HRL), and P(HRL) are irrelevant for the two games with fixed return distributions. The E(R) for these games is derived from the fixed distributions so that E(R)≡1.25 in 045_165 and E(R)≡1.15 in 015_195.

Table III: General results

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
Condition	INV	E(R)	%(HRL)	P(HRL)	R	LOT	INV=LOT
0.9-1.35	57	1.11	47%	47%	1.11	59	N.S (p=0.53)
0.15-1.35	33	0.71	48%	47%	0.73	33	N.S (p=0.29)
0.15-1.8	37	0.81	42%	40%	0.84	29	p<0.02
0.9-1.8	57	1.26	31%	40%	1.18	57	N.S (p=0.67)
four conditions	**46**	**0.97**	**42%**	**44%**	**0.96**	**45**	**N.S (p=0.69)**
0.45-1.65	54	≡1.25	-	-	-	58	N.S (p=0.21)
0.15-1.95	44	≡1.15	-	-	-	45	N.S (p=0.99)
six conditions	**47**	**1.05**	**-**	**-**	**-**	**47**	**N.S (p=0.99)**

Notes: The table presents the mean INV, E(R), P(HRL), R and LOT and the %(HRL) as defined in Table II. The variables R and E(R) are presented in decimal terms to match the titles of the conditions; e.g., the E(R)=1.11 at the top of column (b) represents an expected return of 1.1X on an investment of X. Column (g) reports the results of sign-tests of the hypotheses INV=LOT. The "four conditions" row presents the average values in the four conditions with binary return levels. The "six conditions" row presents the averages across all six conditions. Web supplement C presents an extended version of the table separating between males and females.

Table IV: Cluster analysis of returns

Clusters	C1 N=50	C2 N=24	C3 N=15	C4 N=14	C5 N=7	Sample N=110
%(HRL)						
0.9-1.35	18%	88%	100%	0%	100%	47%
0.15-1.35	0%	100%	100%	100%	0%	48%
0.15-1.8	8%	92%	53%	64%	43%	42%
0.9-1.8	6%	100%	0%	0%	100%	31%
% (males)	56%	67%	53%	50%	43%	56%
σ_6(INV)	21.9	17.9	22.7	16.9	33.2	21.2
σ_6(LOT)	28.9	24.6	26.5	18.3	33.4	26.6

Notes: The upper panel presents the frequency of generous return in each game, for each cluster. %(males) is the proportion of males in the cluster. The σ_6(INV) and σ_6(LOT) are discussed in Section 5.5.

Table V: Gender differences

	Males (N=62)	Females (N=48)	Significance
INV_6	47	47	N.S (p=0.99)
$E(R)_4$	1.0	0.94	N.S (p=0.25)
R_4	0.98	0.95	N.S (p=0.69)
Meff E(R) on INV	0.29**	0.15**	p<0.01
RA_G on INV	-31.8**	-3.5	p<0.01
σ_6(INV)	24	18	p<0.01
LOT_6	51	42	p=0.02
Meff E(R) on LOT	0.53**	0.41**	p<0.01
RA_G on LOT	-28.0**	-11.6	p<0.01
σ_6(LOT)	29	24	p<0.05

Notes: The table compares the investments (upper panel) and the lottery allocations (lower panel) of the males and the females. "Meff E(R) on INV" ("Meff E(R) on LOT") represent the marginal effect of E(R) on INV (LOT). "RA_G on INV" ("RA_G on LOT") represent the RA_G coefficient in regressions of INV (LOT) on E(R) and RA_G. All other variables are as defined in Section 4. The table presents the means for males and females and the results of Pitman tests of equality. The dark (light) shadings highlight significant gender differences at p<0.01 (p<0.05). More details are provided along the discussions and in tables A.2 and A.3 of the appendix.

Table VI: Mean INV and LOT in the conditions with smaller/higher E(R)

	The 3 conditions with smaller E(R)	**The 3 conditions with larger E(R)**	**The difference**
Males' INV	40	54	14**
Males' LOT	37	66	29**
Females' INV	43	51	8**
Females' LOT	32	51	19**

Notes: The six conditions are sorted by the expected return and the average INV (LOT) in the three conditions with smaller E(R) is compared with the average INV (LOT) in the three conditions with larger E(R). The table presents the mean INV (LOT) of males and females in the two samples. A sign-test is applied to the paired differences to test the equality of the INV (LOT) in the conditions with smaller/larger expected return. Two asterisks ** represent significance at $p<0.01$.

Figure 1: The 3-step triadic design

1a: The 0.9-1.8 Investment Game

In Game 1, player B selects one of the next two return levels (Y):
(recall that X denotes the amount sent by A, but this amount is tripled in the hands of B)

Return of 30% (of 3X) = 0.9X
Return of 60% (of 3X) = 1.8X

1.Choosing X
Assume the random assignment has placed you in the role of Player "A".
What is your choice as player "A"? How much would you invest in player "B"?

I choose to invest in B ___________ (of 100,000)

2.Choosing Y
Assume the random assignment has placed you in the role of Player "B".
What is your choice as player "B"? How much would you return to "A" for her investment?

Mark one alternative clearly:

____ Return of 30% (of 3X) = 0.9X
____ Return of 60% (of 3X) = 1.8X

1b: The 0.9-1.8 beliefs elicitation assigment

The current assignment refers to the game where player "B" selects the return level (Y) from the next two possibilities: (recall that X presents the amount sent by A, but this is tripled in the hands of B)

Return of 30% (of 3X) = 0.9X
Return of 60% (of 3X) = 1.8X

We ask you to predict the choice of player B "from the other class", as explained in the instructions. Please fill-in your prediction at the next table:

The return selected by player B	**Probability**
The probability, in my opinion, that B would return 0.9X is	**Q**
The probability, in my opinion, that B would return 1.8X is	
	100%

Copy Q to the supplementary handout

1c: The 0.9-1.8 lottery allocation assignment

The next table presents the payoffs on an investment of X NIS in lottery 5.

The probability Q should be copied from your supplementary handout. Copy the value of Q from your handout and fill-in the complement to 100% in the 100-Q box.

The return on investment of X	Probability
0.9X	**Q**
1.8X	**100-Q**
	100%

How much do you choose to invest in the lottery above?

I choose to invest in lottery 5 ___________ (of 100,000)

Figure 2: The flow of tasks in the binary-games and reversed-order games

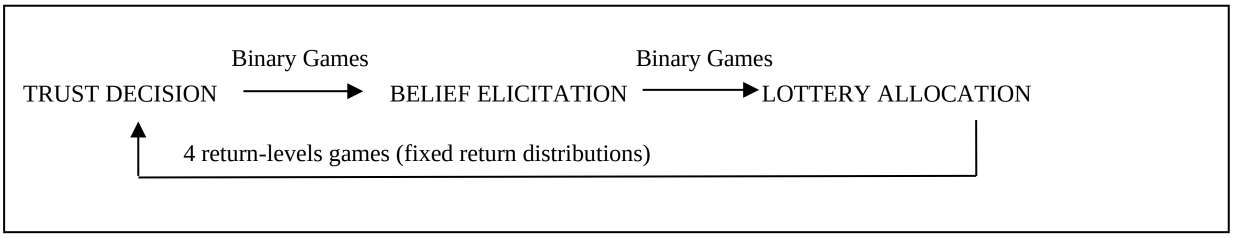

Figure 3: The reverse-order tasks (0.15-1.95)

3a: The 0.15-1.95 Lottery

The next table presents the payoffs on investment of X NIS in Lottery 7

The return on investment of X	Probability
0.15X	16%
0.45X	24%
1.65X	52%
1.95X	8%
	100%

How much do you choose to invest in this lottery?

I choose to invest in Lottery 7 _________ (of 100,000)

3b: The 0.15-1.95 Investment Game

In additional investment game 1, player "B" selects between 4 return levels (Y)

In this case, we have collected the choices of players B in a distinct preceding experiment Z with participants that may resemble or appear different from the current class in terms of return patterns. The next table summarizes the choices of the participants in experiment Z:

The choice of player B in experiment Z	Frequency in %
Return of 5% (of 3X) = 0.15X	16%
Return of 15% (of 3X) = 0.45X	24%
Return of 55% (of 3X) =1.65X	52%
Return of 65% (of 3X) =1.95X	8%

To determine in final balance in this task we would randomly match you with some player B from class Z. What is your choice as player A? How much would you invest in player B?

I choose to invest in "B" _________ (of 100,000) NIS

Appendix A: Panel Tobit Regressions

Appendix Table A.1: Regressions comparing the INV and LOT response to E(R)

	Model (a)		Model (b)	
	INV	LOT	INV	LOT
Intercept	21.5**	-17.6**	28.3**	-16.9**
E(R)	0.24**	0.49**	0.24**	0.54**
RA_G	-	-	-18.4**	-22.8**
Mean LL	-24.1	-22.4	-25.8	-24.2
Mean AIC	49.8	46.9	51.6	48.6

Notes: The table reports the results of panel Tobit regressions, taking into account possible censoring of the investments/allocations at 0 and 100K, of the trust game investments INV and the lottery allocations LOT on the expected returns E(R). The sample size is 660 (N=110 subjects times six conditions) for the INV and LOT parallel estimations. The expected return coefficients are pooled across the sample to summarize the response to expected returns in the trust games and the lottery allocations. The regressions of model (a) are fixed-effects assuming $INV_{i,j}=\alpha_{i,INV}+\beta_{INV}*E(R)_{i,j}$ and $LOT_{i,j}=\alpha_{i,LOT}+\beta_{LOT}*E(R)_{i,j}$ where the index i is for the subject and j for the condition. The table reports the mean fixed-effects intercept and the mean marginal effect of E(R) on the trust game investments (left column) and the lottery allocations (right column). The regressions of model (b) remove the individual intercepts to include RA_G as an independent variable, assuming $INV_{i,j}= \alpha_{INV} + \beta_{INV}*E(R)_{i,j} + \gamma_{INV}*RA_G$ and $LOT_{i,j}= \alpha_{LOT}+ \beta_{LOT}*E(R)_{i,j} + \gamma_{LOT}*RA_G$. The table reports the estimated intercepts, the mean marginal effects of E(R), and the estimated RA_G coefficients (marginal effects are not reported for RA_G since the variable is discrete). The asterisks represent the two-tails significance of the estimated coefficients with ** for $p<0.01$ and * for $p<0.05$. A standard T-test is used for testing the pooled coefficients. A sign-test is used for model (a)'s fixed-effects intercepts. The equality of the INV and LOT estimates is tested using likelihood ratio tests. Dark (light) shading denotes significant differences between the INV and LOT coefficients at $p<0.01$ ($p<0.05$). The bottom lines report the mean log likelihood (LL) and mean Akaike Information Criterion scores (AIC) per subject.

Appendix Table A.2: Regressions comparing the males' and females' INV response to E(R)

	Model (a)		Model (b)	
	Males	Females	Males	Females
Intercept	12.2**	33.0**	18.2**	37.2**
E(R)	0.29**	0.15**	0.33**	0.11*
RA_G	-	-	-31.8**	-3.5
LL	-22.9	-24.6	-26.3	-26.6
AIC	47.9	51.3	49.4	53.4

Notes: The table reports the results of panel Tobit regressions, taking into account possible censoring at 0 and 100K, of the males' and the females' investments INV on the expected returns E(R). The sample size is 372 for the males (N=62 times six conditions) and 288 for the females (N=48 times six conditions). The expected return coefficients are pooled across the sample to summarize the males' and females' response to expected returns. The regressions of model (a) are fixed-effects assuming $INV_{i,j}=\alpha_{i,} + \beta_{MALES}*E(R)_{i,j}$ for the males and $INV_{i,j}=\alpha_i + \beta_{FEMALES}*E(R)_{i,j}$ for the females, where the index *i* is for the subject and *j* for the condition. The table reports the mean fixed-effects intercept and the mean marginal effect of E(R) on the trust game investments of males (left column) and females (right column). The regressions of model (b) remove the individual intercepts to include RA_G as an independent variable, assuming $INV_{i,j}= \alpha_{MALES} + \beta_{MALES}*E(R)_{i,j} + \gamma_{MALES}*RA_G$ for the males and $INV_{i,j}= \alpha_{FEMALES} + \beta_{FEMALES}*E(R)_{i,j} + \gamma_{FEMALES}*RA_G$ for the females. The table reports the estimated intercepts, the mean marginal effects of E(R), and the estimated RA_G coefficients (marginal effects are not reported for RA_G since the variable is discrete). The asterisks represent the two-tails significance of the estimated coefficients with ** for p<0.01 and * for p<0.05. A standard T-test is used for testing the pooled coefficients. A sign-test is used for model (a)'s two sets of N=62 and N=48 fixed-effects intercepts. The Pitman test is used to test the equality of the males' and the females' model (a) fixed effects intercepts. The equality of the males' and females' E(R) and RA_G estimates is tested using likelihood ratio tests. Dark (light) shading denotes significant differences between the males' and females' coefficients at p<0.01 (p<0.05). The bottom lines report the mean log likelihood (LL) and mean Akaike Information Criterion scores (AIC) per subject.

Appendix Table A.3: Regressions comparing the males' and females' LOT response to E(R)

	Model (a)		Model (b)	
	Males	Females	Males	Females
Intercept	-30.3**	-7.0	-35.1**	-1.4
E(R)	0.53**	0.41**	0.61**	0.42**
RA_G	-	-	-28.0**	-11.6
LL	-20.1	-25.0	-22.1	-26.2
AIC	42.3	52.0	44.4	52.6

Notes: The method of the table is identical to the one of Table A.2 except for running the regressions on the N=372 (males) and N=288 (females) lottery allocations.