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# Does Experience Affect Fairness and Reciprocity in Lab Experiments?


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## Abstract[*]

One of the most common criticisms about the external validity of lab experiments in economics concerns the representativeness of participants usually considered in these studies. The ever-increasing number of experiments and the prevalent location of research centers in university campuses produced a peculiar category of subjects: Students with high level of laboratory experience built through repeated participations in experimental sessions. We investigate whether the experience accumulated in this way biases subjects' behaviour in a set of simple games widely used to study social preferences (Dictator Game, Ultimatum Game, Trust Game, and Prisoner's Dilemma Game). Our main finding shows that subjects with a high level of experience in lab experiments do not behave in a significantly different way from novices.



**Keywords:** Experimental Methodology, External Validity, Experience, Lab Experiment.

**JEL codes:** D03, D83, C91, C92.



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## 1. Introduction

Since its first appearance, experimental analysis of economic behaviour has provoked sceptical reactions and criticisms. One of the major aims of the critics has always been the external validity of laboratory results. In particular, a reason behind the possible lack of generalizability of the conclusions obtained in the lab is associated with the predominant use of students as experimental subjects. The extensive use of pools of students, in fact, may generate problems related to their intrinsic characteristics (the majority of them are WEIRD college students[1], coming from western industrialized, rich and democratic countries[2]) but the voluntary basis of the enrolment process, may also produce self-selection that in turn may lead to the formation of experimental pools with peculiar characteristics[3].

A further potential source of bias arises from the combined effect of 'location' and 'number': given the prevalent location of labs in university campuses[4] and the ever-increasing number of experiments run in each of these labs, in fact, subjects tend to accumulate laboratory experience through repeated participations in experimental sessions (Friedman and Cassar, 2004).

We focus on the role of experience and on its behavioural consequences. We investigate whether having taken part in a number of experimental sessions and having gained a certain knowledge about the working of a lab experiment may systematically bias individuals' choices. We think that this represent an important methodological aspect that need to be taken into account when designing and running a lab experiment and when interpreting and assessing its conclusions.

More precisely, in this paper we investigate whether having a long record of participations in experimental sessions (**H types**: $participations \geq 15$) alter subjects' behaviour in a set of widely used experimental games with respect to a benchmark group made by subjects with low experience (**L types:** $1 \leq participations \leq 5$). We fail to observe any systematic behavioural difference between the two groups.

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[1] See Cooper et al. (1999); Peterson (2001); Fehr and List, (2004); Carpenter et al. (2005); Bellemare and Kroger (2007; Danielson and Holm, (2007); Carpenter et al., 2008; Alatas et al. (2009); Belot et al. (2010); Cappelen et al. (2015); Anderson et al. (2013); Fréchette (2015).

[2] Henrich et al. (2010).

[3] See Eckel and Grossman (2000); Falk et al. (2010); Cleave et al. (2012); Exadaktylos et al. (2013); among others.

[4] According to the list drafted by Laboratoire Montpelliérain d´Economie Théorique et Appliquée's, only 2 out of 173 experimental economics labs in the world are not located in university campus and only one is independent and not related to academic activities (http://leem.lameta.univ-montp1.fr/).

The role of experience in economic experiments has been so far largely neglected, with few notable exceptions: Harrison et al. (1987) and Benson and Faminov (1988) discussing IO experiments, Marwell and Ames (1980), Isaac et al. (1984) and Bolton (1991) in bargaining games experiments and more recently, Matthey and Regner (2013), Conte et al. (2014), Capraro and Cococcioni (2015) and Xue et al. (2015). The first two papers document that highly experienced players are more effective as monopolists and are more capable at achieving profitable tacit collusion than inexperienced ones. Marwell and Ames (1980) and Isaac et al. (1984) both consider public good games situations and find no significant differences due to the different level of experience of participants. Bolton (1991) finds a similar negative result in an experiment involving alternating-offer bargaining.

The more recent contribution by Matthey and Regner (2013) explores whether subjects' experience spills over between experiments. Their meta-analysis considers data from four different studies and their results show that subjects with a higher number of participations tend to be less generous in allocation decisions. However this holds true only if participations in experiments that involved games similar to those used in the four studies are considered. Frequency in participation *per se* in laboratory sessions is not taken into account. On the other hand, Conte et al. (2014) focus on a public good game and consider specifically the effect of *'experience'* and *'history'*. 'Experience' measures the level of previous participation in experiments where a public goods game or a prisoner's dilemma were involved, while 'history' denotes previous participations in experiments with different games. They find that at the aggregate level, subjects with 'experience' contribute smaller amounts, expect that other players contribute less and hold more accurate beliefs when compared with subjects with no experience. They also show that 'history' as well influences subjects' behaviour although to a lesser extent than 'experience'.

Focusing on cooperation in one-shot interaction, Capraro and Cococcioni (2015) analyse the history-dependent dynamic process. Many experimental studies suggest that cooperative decision-making in one-shot interactions is most likely a history-dependent dynamic process. They run a standard two-person Prisoner's Dilemma in which participants are randomly assigned to either of two conditions: (i) Time pressure condition which measures intuitive cooperation and (ii) time delay condition which measures deliberate cooperation. Their main findings show that promoting intuition versus deliberation has no effect on cooperative behaviour among inexperienced subjects playing in a non-cooperative setting and that experienced subjects cooperate more than inexperienced subjects, but only under time pressure. These results suggest that cooperation is a learning process, rather than an instinctive impulse[5].

[5] It is important to notice that their experiment is run in India, where the 'default' level of cooperation is, according to the authors, extremely low. Is a similar study run in the US, Capraro and colleagues (2014) found that the level of subjects' experience has a negative effect on cooperation. The general interpretation

Xue et al. (2015) replicate and extend a simple riskless choice experiment originally devised by Hochman et al. (2014). One of their five hypotheses concerns the possible role of experience. They test whether participants with greater experience in experiments will have higher maximization rates in prepayment treatments. Their results show that individuals who have been participating in many economics experiments before, do not choose differently than those who are novices.

Our contribution enriches the current state of the literature and departs from the most relevant contributions (Matthey and Regner, 2013; Conte at al., 2014; Capraro and Cococcioni, 2015), in two main respects: first, Matthey and Regner (2013) run a meta-analysis of four previous studies using dictator, ultimatum and mini-trust games; on the other hand Conte at al. (2014) and Capraro and Cococcioni (2015) run a proper experiment but focusing only on public good games and Prisoner's Dilemma, respectively. We, on the contrary, design and run a controlled experiment considering a richer set of games. Second, our contribution differs as far as the quantitative definition of 'experience' is concerned. We denote, in fact, subjects in our pool as experienced only if they have a considerable large number of lab participations (*at least* fifteen). Matthey and Regner (2013) consider subjects with *at most* thirteen participations; Conte et al. (2014) define as experienced, subjects with at least another participation in experiment with a public good game or a prisoner's dilemma. In Capraro and Cococcioni (2015) there is no hard information about the actual number of participations in experiments but a self-reported measure of experience: Participants are asked to answer to what extent they have previously participated in other studies like that (e.g., exchanging money with strangers), using a 5 points Likert-scale from 'Never' to 'Several times': a subject was considered inexperienced if he or she answered 'never'.

The remainder of the paper is organized as follows. In section 2 the experimental procedures are described. Section 3 provides specific details about the games and their parametrization. In Section 4 the testable hypotheses are derived. Section 5 describes the statistical analyses and the main result. Section 6 reports further results generated by two side-manipulations of information about the counterpart's level of experience. Section 7 concludes.

## 2. Experimental Design and Procedures

Our main goal is to investigate the effect of a high level of experience in lab experiments on decision-making in simple representative experimental games focusing on fairness and reciprocity. Exploiting data stored in the ORSEE recruitment system (Greiner, 2015) of the University of Cologne, by design we recruited both *high experience*

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of these results is that experience produces a sort of 'regression toward the mean', that is, in high cooperative environments (like the US) determines a decrease of cooperation, while in low cooperative ones (India), induces an increase in people's willingness to cooperate.

*subjects* **(H types)**, that is, individuals with at least 15 participations in experiments and *low experience subjects* **(L types)**, namely, individuals having between 1 and 5 previous participations[6]. These two pools have been chosen by design in order to assure, on one hand, (i) an adequate number of subjects in each group and, on the other hand, (ii) a sharp difference in the level of individual experience between the two groups.

In our main experimental condition (C1)[7] each participant is asked to make his/her decisions in four standard experimental games without receiving any information about the level of lab experience of the counterpart[8] he/she is randomly re-matched with in the different games (perfect stranger matching). In practice the simple fact of having accumulated *high experience* **(H types)** vs *low experience* **(L types)** represents the main experimental variable.

We elicited individual behaviour in four games: Dictator Game, Ultimatum Game, Trust Game, and Prisoner's Dilemma Game[9]. In the Dictator Game, Ultimatum Game and Trust Game, all the subjects played both role A (dictator/proposer/trustor) and role B (receiver/responder/trustee) in a strategy-method fashion, and subsequent stages were not announced in advance.

In order to implement an incentive-compatible payment mechanism at the end of each experimental session, only one game and one decision were randomly selected and the corresponding payoff was paid in cash. If Dictator Game, Ultimatum Game and Trust Game were randomly selected for the payments, a random assignment determined which one of the members of the matched couple must be actually considered as player in role A, the other one is considered as player in role B. A's action (Dictator/Proposer/Trustor) is then implemented. Finally, if the Prisoner's Dilemma was randomly selected for the payments, players' actions were implemented.

All subjects received 2.50 Euros as show-up fee and got an average experimental payment of 7.50 Euros for a 45 minutes lab session including post-experimental surveys

[6] Subjects having no experience at all have not been recruited. Since this category of subjects is totally inexperienced with lab experiments, this might be a cause for naïve outcomes as these subjects are often times stressed by the completely new environment they are exposed to, and they are not familiar with the standard procedures.

[7] Further side-manipulation, C2 and C3 are reported in section 6.

[8] In the debriefing questionnaire, it is asked to self-report about the number of experiments subjects had already participated in the past. The correlation between this self-reported measure and the actual record provided by ORSEE is 0.89. This shows how subjects are quite aware about their own individual level of experience in laboratory experiments.

[9] The logical sequence "Dictator Game → Ultimatum Game → Trust Game", moving from the baseline case (DG) to the more sophisticated (TG) interaction, it is implemented in order to favour the comprehension of the games and to avoid confusion. The Prisoner's dilemma game is placed at the end of sequence in order to reduce priming effect and because of the different nature of its dynamics.

and debriefing. The exchange rate between ECU and Euros was 6 ECU=1 Euro. Six experimental sessions were conducted on January 15th and 16th 2015 at the University of Cologne[10]. The experimental protocol was implemented using the Bonn Experiment System (Seithe, 2012) (Figures 1a and b). A double blind anonymity procedure (subject vs subject and subject vs experimenters) was maintained during and after the experiment both about the participants' decisions and the payments. No feedback or results were received by participants before the end of the session.

**Figures 1a-b.** Screen shots of the computer interface.

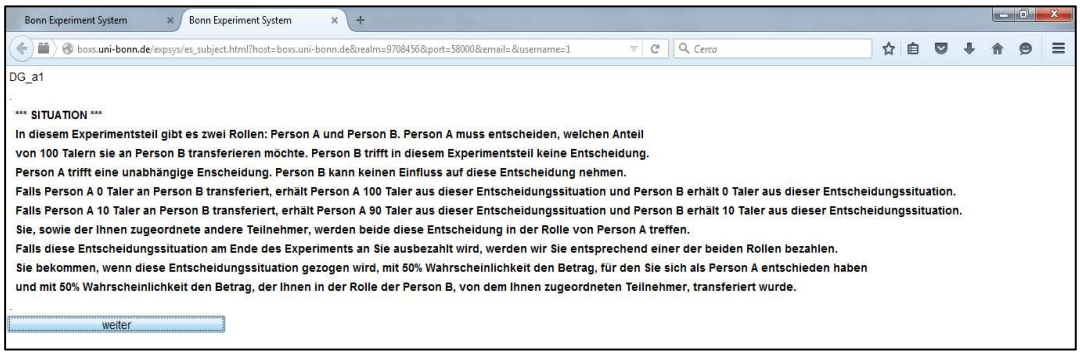


Figure 1a. Instructions: Dictator Game

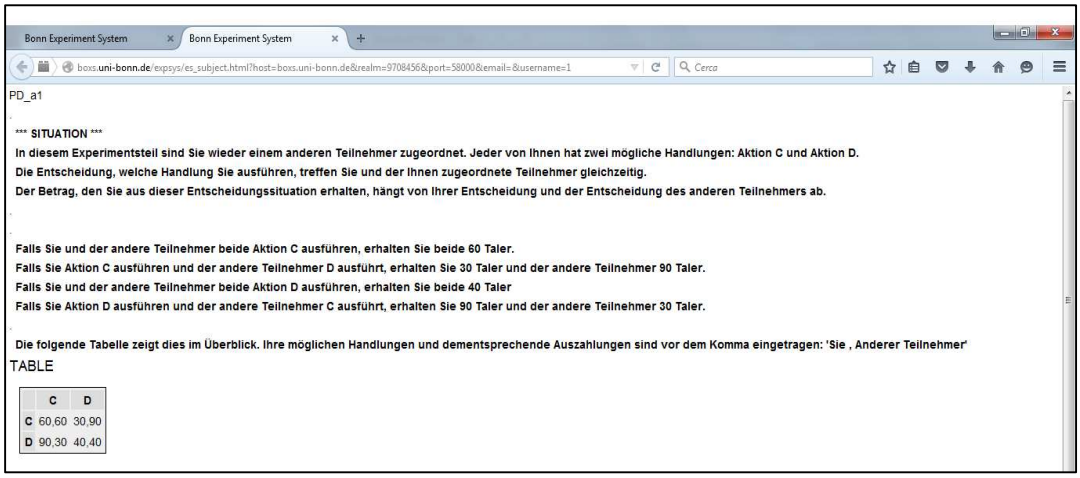


Figure 1b. Instructions: Prisoner's Dilemma

[10] The instructions are provided in the appendix.

## 3. The Games

We elicited individual behaviour in four games: Dictator Game, Ultimatum Game, Trust Game, and Prisoner's Dilemma Game. In the Dictator Game, Ultimatum Game and Trust Game, all the subjects played both role A (dictator/proposer/trustor) and role B (receiver/responder/trustee) in a strategy-method fashion, and subsequent stages were not announced in advance.

In Table 1 (A/B) the main parameters of the games are specified and summarized.

In the **Dictator Game,** dictator A is endowed with 100 ECU. She is asked to send any amount between 0 and 100 (in steps of 10) to receiver B who gets such amount.

In the first stage of the **Ultimatum Game**, each subject first plays the role of proposer A. Proposer A is endowed with 100 ECU. She is asked to send any amount of it between 0 and 100 (in steps of 10) to responder B who gets such amount. If B accepts the offer, the two subjects share the endowment as proposed by player A. If B rejects the share offered by A, the entire endowment goes back to the experimenter and the subjects would get 0 ECU each.

In the second stage, each subject plays the strategy method – whether to accept or not offers of 0-10-20-30-40-50-60-70-80-90-100 ECU – for the role of responder B.

In the first stage of the **Trust Game**, each subject first plays the role of trustor A. Trustor A is endowed with 50 ECU. She is asked to send any amount of it between 0 and 50 (in steps of 10) to trustee B. The amount transferred by the trustor A to the trustee B is multiplied by a factor of 3 by the experimenter and sent to B. In the second stage, each subject plays the strategy method for the role of trustee B stating the amount returned to A in the different cases in which she gets 30-60-90-120-150 ECU.

Finally, in the **Prisoner's Dilemma** there are two players and each of them has two possible actions: cooperating or defecting. In order to play the game, both players simultaneously choose one of two actions. The key feature of such game is that for each player, the choice to defect has a higher payoff regardless of the choice made by the other player. That is, we used the classic form of Prisoner's Dilemma where cooperating is strictly dominated by defecting, so that the only Nash equilibrium is for all players to defect. Their earnings depend on both players' actions: if both players decide to cooperate both of them get 60 ECU; if both players decide to defect both of them get 40 ECU; and if one of two players chooses to defect and the other chooses to cooperate, their earnings will be 90 ECU and 30 ECU respectively.

For all the different games, control questions are administrated in order to tests the full comprehension of each game (see Appendix).

**Table 1 (A/B): Parametrization of the games**

Table A. Dictator Game, Ultimatum Game and Trust Game

| | **Dictator Game** | **Ultimatum Game** | **Trust Game** |
|---|---|---|---|
| **Endowment role A** | 100 ECU | 100 ECU | 50 ECU |
| **Endowment role B** | 0 ECU | 0 ECU | 0 ECU |
| **Efficiency rate** | | | x3 |
| **Role A→ Role B** | 0-100 ECU (steps of 10) | 0-100 ECU (steps of 10) | 0-50 ECU (steps of 10) |
| **Role B→ Role A** | | Accept/Reject *strategy method | 0-150 ECU (steps of 10) *strategy method |

Table B. Prisoner's Dilemma Game

| | | ***Other*** | |
|---|---|---|---|
| | | **Cooperate** | **Defect** |
| ***You*** | **Cooperate** | 60, 60 | 30, 90 |
| | **Defect** | 90, 30 | 40, 40 |

## 4. Testable Hypotheses

According to Friedman and Cassar (2004), subjects' behaviour changes over time as they get used to the experimental setting. This fact represents an issue both in terms of *intra-session* learning and *inter-sessions* experience accumulation. As far as it regards intra-session learning, Binmore and Shaked (2010) observe how the fact of getting used to the experimental setting leads the subjects to converge to behavioural patterns closer to the 'homo economicus' ones. Nevertheless, it is not clear if this is also the case for inter-sessions experience accumulation in which subjects get used to the experimental setting by participating in several experimental sessions. Following Binmore's argument, and given our focus on fairness and reciprocity, we can derive the following testable hypotheses for the different games in object:

**hp.1:** In the Dictator Game the average dictator's offer for the **H types** is smaller than the average dictator's offer for the **L types**.

**hp.2a:** In the Ultimatum Game the average proposer's offer for **H types** is smaller than the average proposer's offer for **L types.**

**hp.2b:** In the Ultimatum Game the minimum acceptable offer for **H types responders** is smaller than the minimum acceptable offer for the **L types responders**

**hp.3a:** In the Trust Game the average trust rate for **H types** is smaller than the average trust rate for **L types**.

**hp.3b:** In the Trust Game the average level of trustworthiness for **H types trustees** is smaller average level of trustworthiness for **L types trustees**.

**hp.4:** In the Prisoner's Dilemma game, the defection rate is larger for **H types** subjects than the defection rate for **L types**.

## 5. Results

First, in Table 2 we summarize the characteristics of the participants. We enrolled a total of 134 subjects (77 female and 57 male), aged on average 25 and balanced for the level of laboratory experience: 67 **H type** subjects (min 15, max 86 previous participations in experiments, avg. 31) and, 67 **L type** subjects (min 1, max 5 previous participations in experiments, avg. 3). Data show that, apart for the degree of laboratory experience, the two pools are fairly homogeneous.

In this section we discuss the effect of a *high experience* level exerts on individuals' choices with respect to a *low experience* level.

In our main experimental condition **(C1)**, where players have no information about the level of experience of the partner, any difference in behaviour between **H type** subjects and **L type** subjects can be interpreted as the effect of subjects' own level of experience. By comparing their choices in a between-subjects fashion, we can test the general hypothesis about whether experience, *per se,* systematically modifies subjects' behaviour.

**Table 2: Comparability of the two experimental groups**

| **Characteristics** | **H types (n = 67)** | **L types (n = 67)** | **delta: Δ (H-L)** ***P-value*** |
|---|---|---|---|
| Female, # | 37 | 40 | 0.60 |
| (%) | (55.2 %) | (59.7 %) | |
| Age, mean | 25.7 | 24.1 | 0.14 |
| (min-max) | (19-60) | (18-65) | |
| Behavioural Econ. classes, # | 12 | 11 | 0.82 |
| (%) | (18 %) | (16.4 %) | |
| Games Theory classes, # | 23 | 18 | 0.35 |
| (%) | (34.4 %) | (26.9 %) | |

### 5.1 Non-parametric analysis

Figures 2a-f plot participants' behaviour by subjects' groups: **H** and **L** types. From a first visual inspection of the graphs, it turns to be quite evident that **H** and **L** types do not show different behavioural patterns in all the four different experimental games and this is confirmed by non-parametric tests.

**Figure 2a-f. Choices in the four games by experience levels**

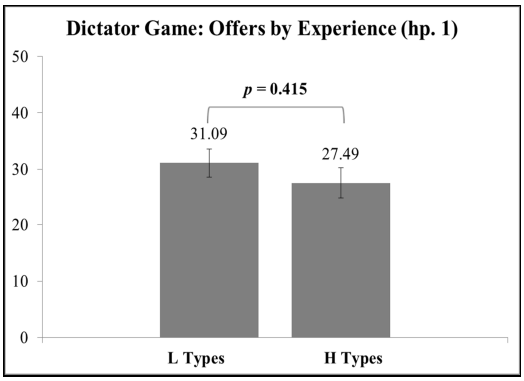


Figure 2a: Dictator Game

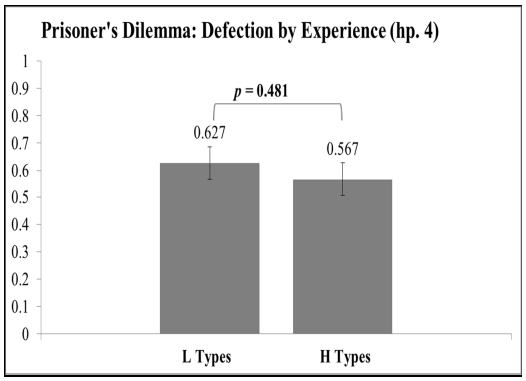


Figure 2b: Prisoner's Dilemma

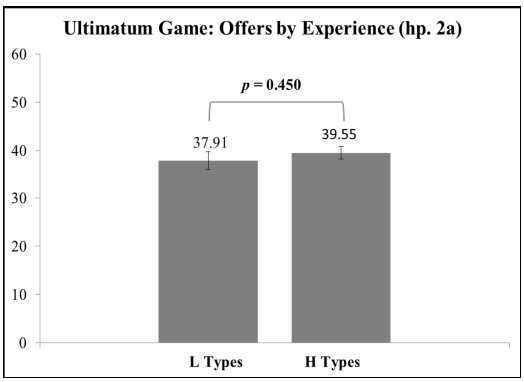


Figure 2c: Ultimatum Game (Proposer)

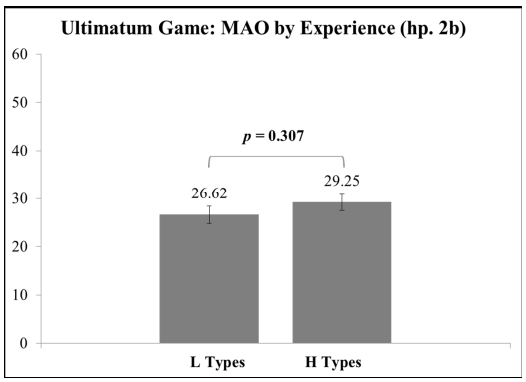


Figure 2d: Ultimatum Game (Responder)

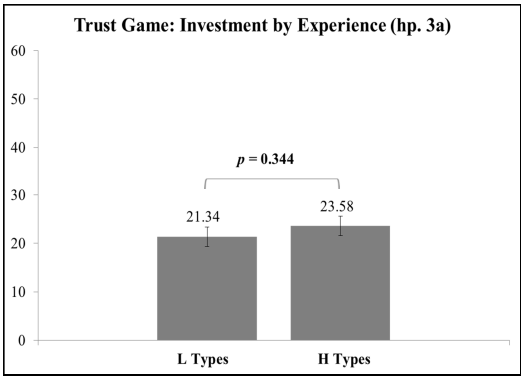


Figure 2e: Trust Game (Trustor)

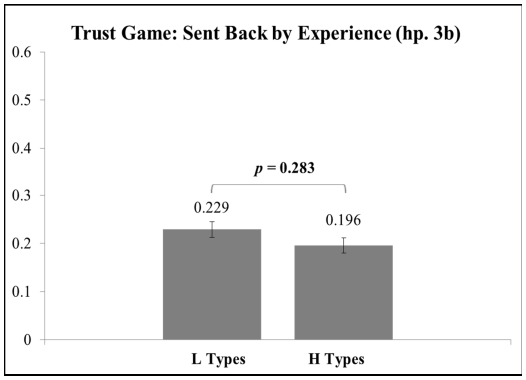


Figure 2f: Trust Game (Trustee)

In the **Dictator Game**, out of a budget of 100 ECU, **H** types allocate on average 27.5 ECU to the counterpart, and **L** types allocate 31.1 ECU. The giving rates **(hp.1)** of the two different pools of subjects are statistically indistinguishable from each other at any conventional level ($p$=0.42, Two-sided Wilcoxon-Mann-Whitney test) (see fig. 1a). The average 1/3 giving rate observed in our experiment is in line with the consolidated result reported in the literature (Engel, 2011).

In the **Ultimatum Game**, out of a budget of 100 ECU for player in role 'A', the average amount sent to 'B' is 39.6 ECU for **H** and 37.9 ECU for **L** types. The giving rates **(hp.2a)** of the two different pools of subjects are statistically indistinguishable from each other at any conventional level ($p$=0.45, Two-sided Wilcoxon-Mann-Whitney test) (see fig. 1c). The average proposers' offers of about 40% we observe in our ultimatum bargaining experiment is in line with the common results reported in the literature (Güth and Kocher, 2014). For the same game, the average minimum acceptable offer –mao – for players in role 'B' is 29.3 ECU for **H** types and 26.6 ECU for **L** types. The minimum acceptable offers **(hp.2b)** - about 30% of the endowment - in the two different pools of subjects, are statistically indistinguishable from each other at any conventional level ($p$=0.31, Two-sided Wilcoxon-Mann-Whitney test) (see fig. 1d). Also in this case, the result meets the standard finding of the literature (Güth and Kocher, 2014).

In the **Trust Game**, given the endowment of 50 ECU for player in role 'A', the average amount invested is 23.6 ECU for **H** types and 21.3 ECU for **L** types. The trust rates **(hp.3a)** of the two groups are statistically indistinguishable from each other at any conventional level ($p$=0.34, Two-sided Wilcoxon-Mann-Whitney test) (see fig. 1e). The fact that on average subjects invest about 45% of their endowments is in line with the findings of the literature (Johnson and Mislin, 2011). Finally, the average return rate **(hp.3b)** in the same game equals to 0.196 for **H** types and to 0.229 for **L** types ($p$=0.28, Two-sided Wilcoxon-Mann-Whitney test) (see fig. 1f).

In the **Prisoner Dilemma** the rate of defection is 57% for the **H** types and 63% for the **L** types. The defection rates **(hp.4)** in the two different pools of subjects are statistically indistinguishable from each other at any conventional level ($p$=0.50, $\chi^2$-test) (see fig. 1b). The average 60% defection rate we observe in our experiment is consistent with the common results reported in the literature (Brosig, 2002).

These numbers show negligible differences between high and low experienced subjects for all the four games and the non-parametric analysis rejects any significant behavioural difference between **H types** and the benchmark group based on **L types.**

### 5.2 Regression Analysis

In order to check the robustness of the non-result delivered by the non-parametric analysis, **Table 3** reports further **OLS regression analyses** that allow to assess the differential effect caused by a high level of laboratory experience controlling for richer set of individual-specific factors that might influence the behavioural outcomes observed in the lab.

Model (1) focuses on the **Dictator Game**: The offer in the dictator game represents the outcome variable. Models (2) and (3) address the **Ultimatum Game**: In model (2) the offer in the ultimatum game represents the outcome variable while in model (3) the minimum accepted offer – mao – is the outcome variable. Models (4) and (5) analyse individual choices in the **Trust Game**: In model (4) the outcome variable is the amount transferred by the trustee to the trustor while the mean return rate from trustor to the trustee is the dependent variable in model (5). In column (6) the propensity to defect in a **Prisoner's Dilemma** game is analysed. The outcome variable is the probability of defection in a linear probability model (all coefficients – by construction – can be interpreted as marginal effects).

All these outcome variables are analysed at the light of our main experimental variable (H type dummy variable) as well as a set of individual-specific control variables that might influence the behavioural outcomes. **H type** is a dummy variable that identifies the high individual level of experience in lab experiments. **Risk Attitude** identifies the elicited individual level of risk-aversion considering the switch point from risky bets to safer ones in standard Holt and Laury (2002) test involving 15 pairs of lotteries. **Experimental Economics Class** is a dummy variable that identifies subjects that have been exposed to an experimental economics class. **Game Theory Class** is a further dummy variable that identifies subjects that have received training in game theory. **Gender** (male=1) is a dummy variable that is equal to one if the subject is a male. **Age** is self-reported in the post experimental questionnaire. **Non-German nationality**, since the vast majority of the experimental subjects are Germans, this dummy variable identifies the 13% of the subjects that declared a nationality other than the German. We also include **Other Demographics** mostly referred to the economic status of the subjects, living conditions and marital status.

The OLS estimates for the **H type** dummy variable reject any statistically significant differential effect generated by a higher level of experience – with respect to the baseline group (Constant) of low experienced subjects (L types) – in all the different games and roles. Offers in the dictator game and in the ultimatum game seem to be marginally negatively affected by lower individual levels of risk attitude, but this negative effect is not detected when we focus on the public good interaction or on the prisoner's dilemma where – in principle – risk attitude should represent a more substantial issue.

**Table 3. Behavioural outcomes (C1). OLS regressions.**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| **OUTCOMES:** | **DG offer (Hp.1)** | **UG offer (Hp.2a)** | **UG mao (Hp.2b)** | **TG trust (Hp.3a)** | **TG avg. send back (Hp.3b)** | **PD defection (Hp.4)** |
| **H type (Dummy)** | **-3.789** | **2.041** | **3.378** | **3.145** | **-3.485** | **-0.078** |
| | **(3.886)** | **(2.302)** | **(2.543)** | **(2.904)** | **(2.523)** | **(0.090)** |
| Risk Attitude | -1.123** | -0.755** | 0.442 | 0.264 | -0.352 | -0.011 |
| | (0.509) | (0.301) | (0.335) | (0.380) | (0.330) | (0.012) |
| Experimental Econ. Class | -1.785 | 1.142 | 6.347* | -6.284 | 0.648 | -0.166 |
| | (5.485) | (3.248) | (3.566) | (4.099) | (3.561) | (0.127) |
| Game Theory Class | -2.006 | -1.337 | 1.065 | 1.507 | 0.547 | 0.064 |
| | (4.603) | (2.726) | (3.001) | (3.440) | (2.988) | (0.107) |
| Gender (Male=1) | -6.928* | 4.277* | 3.899 | 8.051*** | 1.049 | 0.053 |
| | (3.943) | (2.335) | (2.600) | (2.947) | (2.560) | (0.091) |
| Age | -0.127 | 0.055 | 0.038 | -0.489* | 0.338 | -0.001 |
| | (0.367) | (0.217) | (0.239) | (0.274) | (0.238) | (0.009) |
| Non-German nationality | -1.799 | -6.919** | -1.631 | -2.246 | -1.862 | 0.091 |
| | (5.588) | (3.310) | (3.628) | (4.177) | (3.628) | (0.129) |
| Other Demographics | yes | yes | yes | yes | yes | yes |
| Constant | 41.359*** | 39.993*** | 16.881** | 30.437*** | 18.816*** | 0.887*** |
| | (10.431) | (6.178) | (6.772) | (7.796) | (6.772) | (0.242) |
| Observations | 134 | 134 | 132 | 134 | 134 | 134 |
| R-squared | 0.109 | 0.139 | 0.145 | 0.136 | 0.049 | 0.081 |

**Notes:** Three stars, two stars and one star for significant level at the 1%, 5% and 10% level respectively. Standard errors are reported in parenthesis. The sample size relevant for the regression in column (3) is 132 instead of 134, because two subjects stated inconsistent choices in terms of minimum acceptance offer in the Ultimatum Game.

Training in game theory or in experimental economics does not systematically bias subjects' behaviour compared to baseline group of subjects who have not been exposed to such training. Males seem to be significantly more generous than females when transferring a share of their endowments to their counterparts in the ultimatum

game and trust game. The opposite when we look males' behaviour in the ultimatum game. No clear gender-based pattern can be established. The age of the subjects, does not affect substantially the observed outcomes in all the different games.

These regression analyses, taking into account a wider set of control variables that might affect the observed behavioural outcomes, confirms the non-result delivered by the non-parametric analysis: H types do not behave significantly differently with respect to L types.

## 6. Further manipulations

In order to further enrich our comprehension about the effect of accumulated experience in lab experiments on subjects' behavioural outcomes, two additional within-subject manipulations (condition C2 and condition C3) have been devised.

While under the condition **C1,** subjects having different levels of experience were purely randomly paired, and no further information was given to them, in the two subsequent unannounced sets of interactions **C2** and **C3** – the ordering of this two side-manipulations was randomized while C1 was always implemented at first in order to keep it totally independent from the other two variations[11]– the following information concerning the level of experience of the counterpart was determined by design and revealed in the instructions for all the four games:

**C2**: for *H* [*L*]: *"…in this situation you will face a different counterpart who has a HIGH [LOW] level of experience. That is, a subject who has participated in many [in few] experiments";*

**C3**: for *H* [*L*]: *"…in this situation you will face a different counterpart who has a LOW [HIGH] level of experience. That is, a subject who has participated in few [in many] experiments".*

In order to avoid multiple testing issues, in this section we rely only on regression analyses.

As first step, the within-subject first-difference of the outcomes – computed contrasting each behavioural outcome in the main condition C1 against the

[11] Sequences: i) C1 / C2 / C3; ii) C1 / C3 / C2 .

corresponding action under the manipulated condition **C2** – are assessed. The differential effect generated by the interaction between experienced subjects paired together **(H: vs H)**, compared to baseline pairs of low experienced players **(L: vs L)** are captured by the coefficients for **H type** and the **Constant**, respectively.

As second step, the same exercise is performed contrasting behavioural outcome in the main condition C1 against the corresponding action under the condition **C3** in order to isolate the differential effect generated by high experience subjects interacting with low experienced ones **(H: vs L)** and vice versa **(L: vs H).** In both the cases, control variables are included in the regression analysis.

### 6.1. C1 vs C2: Pairs with homogeneous levels of experience (H: vs H / L: vs L)

**Table 4** reports about the change of the behaviour when subjects are informed that they are now interacting with an opponent having the same level of experience (condition C2) compared to the baseline behaviour elicited under condition C1. For all games, the estimates of the **Constant** are not significant at any conventional statistical level. This means that the individual behaviour of L types does not change when they are exposed to C2 compared to the baseline behaviour pictured under the C1 condition.

Similarly, the coefficients for the dummy variable **H type** are not significant at any conventional, except for a marginal negative effect (*p-value*=0.06) detected for the Minimum Acceptable Offer in the Ultimatum game. The general pattern across games, shows how highly experienced subjects do not behave differently from less experienced ones.

The control variables do not show any consistent pattern of significant effects on subjects' behaviour.

### 6.2. C1 vs C3: Pairs with heterogeneous levels of experience (H: vs L / L: vs H)

**Table 5** reports about the change of the behaviour when subjects are informed that they are now interacting with an opponent having a different level of experience (condition C3) compared to the baseline behaviour elicited under condition C1. For all games, the estimates of the **Constant** are not significant at any conventional statistical level. This means that the individual behaviour of low experienced subjects does not change when they are exposed to C3 compared to the baseline behaviour pictured under condition C1.

Similarly, the coefficients for the dummy variable **H type** are not significant at any conventional. Also in this third case, this shows how highly experienced subjects do not behave differently from less experienced ones.

The control variables do not show any consistent pattern of significant effects on subjects' behaviour.

**Table 4. Within-subject first-differences of the outcomes: (ΔC1 - C2). OLS regressions.**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| ***Δ C1-C2*** | ***Δ C1-C2*** | ***Δ C1-C2*** | ***Δ C1-C2*** | ***Δ C1-C2*** | ***Δ C1-C2*** | ***Δ C1-C2*** |
| **OUTCOMES:** | **DG offer** | **UG offer** | **UG mao** | **TG trust** | **TG avg. trustworth.** | **PD Defection** |
| **H type** | **0.971** | **-0.619** | **-3.331*** | **-0.047** | **1.071** | **0.073** |
| **[H: vs H]** | **(3.405)** | **(2.334)** | **(1.749)** | **(1.913)** | **(1.345)** | **(0.075)** |
| Risk Attitude | -0.148 | -0.530* | -0.370 | -0.216 | 0.070 | -0.004 |
| | (0.446) | (0.306) | (0.230) | (0.250) | (0.176) | (0.010) |
| Experimental Economics Class | -0.146 | 5.394 | -0.498 | 2.216 | 2.097 | -0.075 |
| | (4.806) | (3.294) | (2.446) | (2.700) | (1.898) | (0.105) |
| Game Theory Class | -0.079 | 1.467 | 4.613** | 0.779 | 1.005 | 0.003 |
| | (4.034) | (2.765) | (2.061) | (2.266) | (1.593) | (0.089) |
| Gender (Male=1) | -2.969 | 1.080 | 1.713 | 2.291 | -2.602* | -0.027 |
| | (3.455) | (2.368) | (1.787) | (1.941) | (1.365) | (0.076) |
| Age | 0.971 | -0.619 | -3.331* | -0.047 | 1.071 | 0.073 |
| | (3.405) | (2.334) | (1.749) | (1.913) | (1.345) | (0.075) |
| Non-German nationality | 0.305 | -0.969 | 5.191** | 3.920 | -2.212 | -0.175 |
| | (4.897) | (3.356) | (2.490) | (2.750) | (1.934) | (0.107) |
| Other Demographics | yes | yes | yes | yes | yes | yes |
| **Constant** | **7.900** | **0.571** | **1.966** | **1.102** | **-4.537** | **0.330** |
| **[L: vs L]** | **(9.141)** | **(6.266)** | **(4.648)** | **(5.134)** | **(3.610)** | **(0.201)** |
| Observations | 134 | 134 | 131 | 134 | 134 | 134 |
| R-squared | 0.026 | 0.090 | 0.131 | 0.051 | 0.137 | 0.071 |

**Notes:** Three stars, two stars and one star for significant level at the 1%, 5% and 10% level respectively. Standard errors are reported in parenthesis. The sample size relevant for the regression in column (3) is 131 instead of 134, because three subjects stated inconsistent choices in terms of minimum acceptable offer in the Ultimatum Game.

**Table 5. Within-subject first-differences of the outcomes: (ΔC1 - C3). OLS regressions.**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| ***Δ C1-C3*** | ***Δ C1-C3*** | ***Δ C1-C3*** | ***Δ C1-C3*** | ***Δ C1-C3*** | ***Δ C1-C3*** | ***Δ C1-C3*** |
| **OUTCOMES:** | **DG offer** | **UG offer** | **UG MAO** | **TG trust** | **TG avg. trustworth.** | **PD defection** |
| **High type** | **-1.694** | **0.433** | **-0.820** | **3.281** | **1.329** | **-0.062** |
| **[H: vs L]** | **(3.709)** | **(2.570)** | **(1.577)** | **(2.156)** | **(1.608)** | **(0.090)** |
| Risk Attitude | -0.238 | -0.622* | -0.034 | 0.144 | 0.024 | -0.003 |
| | (0.485) | (0.336) | (0.207) | (0.282) | (0.211) | (0.012) |
| Experimental Economics Class | -1.442 | 5.998 | 3.313 | 1.617 | 1.461 | 0.016 |
| | (5.234) | (3.627) | (2.211) | (3.043) | (2.270) | (0.126) |
| Game Theory Class | 0.977 | -1.846 | 0.329 | 0.450 | 3.828** | 0.135 |
| | (4.393) | (3.044) | (1.861) | (2.554) | (1.905) | (0.106) |
| Gender (Male=1) | -5.148 | 0.573 | 1.273 | 3.916* | -0.591 | 0.134 |
| | (3.763) | (2.607) | (1.613) | (2.188) | (1.632) | (0.091) |
| Age | -0.170 | -0.002 | 0.041 | -0.124 | 0.174 | -0.003 |
| | (0.350) | (0.243) | (0.148) | (0.204) | (0.152) | (0.008) |
| Non-German nationality | 4.155 | 1.030 | 1.314 | 1.028 | -3.286 | -0.058 |
| | (5.333) | (3.695) | (2.250) | (3.100) | (2.313) | (0.129) |
| Other Demographics | yes | yes | yes | yes | yes | yes |
| **Constant** | **11.789** | **5.319** | **-2.242** | **0.515** | **-2.587** | **-0.075** |
| **[L: vs H]** | **(9.955)** | **(6.898)** | **(4.200)** | **(5.788)** | **(4.317)** | **(0.240)** |
| Observations | 134 | 134 | 132 | 134 | 134 | 134 |
| R-squared | 0.036 | 0.078 | 0.043 | 0.071 | 0.106 | 0.050 |

**Notes:** Three stars, two stars and one star for significant level at the 1%, 5% and 10% level respectively. Standard errors are reported in parenthesis. The sample size relevant for the regression in column (3) is 132 instead of 134, because two subjects stated inconsistent choices in terms of minimum acceptable offer in the Ultimatum Game.

## 7. Conclusion

The generalizability of conclusions drawn from lab experiments is still a debated issue in economics. It is of course a multifaceted problem that refers to many dimensions of the experimental practices and methods: the artificiality of the situations considered in the lab, the small size of the incentives, the lack of representativeness of the experimental subjects, are only few of the problematic elements. In particular when we consider the reliability of the conclusions drawn from experiments involving convenience pool of students we should also ask whether the repeated participation into different experiments by these subjects might have a lasting biasing effect on their behavioural tendencies in the lab. Were this to be true, in fact, experienced subjects would constitute an even less representative pool whose behaviour patterns could not be reliably generalized. In this paper we addressed precisely this point. By design we investigated whether having repeatedly taken part in previous experiments consistently modifies individuals' behaviour in a set of widely used games focusing on fairness and reciprocity: Dictator Game, Ultimatum Game, Trust Game, and Prisoner's Dilemma Game. We considered a between-subjects design to compare the behaviour of high experienced and low experienced subjects in the four games. Our data show that a high level of experience *per se* does not influence subjects' behaviour compared to a benchmark pool of low experienced subjects.

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## Appendix A: Experimental Instructions

### GENERAL INSTRUCTIONS

Welcome and thank you for participating in this experiment. The aim of this study is to investigate how people make decisions in particular situations. Feel free to ask questions at any time before the session begins, we will answer you privately. From now until the end of the session, unauthorized communication of any nature with other participants is prohibited. Decisions have to be made individually and in private.

This is not a test, so there are no right or wrong answers. Just think about what is best for you and act accordingly. Your decisions will be strictly anonymous and could not be linked to you in any way. The data collected will be used only for scientific purposes and stored for the duration of this study. At the end of the session one of situations will be randomly selected and you will be paid in cash according to the choice you made in that particular situation (the rules of the specific situation are explained in details below). You will also receive you € 2.5 as show-up fee. Note that in each situation, you will be paired with a different person. You will not be told to whom you are matched with during or after the experiment, and he or she will not be told who you are either during or after the experiment. The experiment involves three phases, and overall, it will last approximately 60 minutes.

### *Phase 1 [Main experimental condition C1]*

In this part of the experiment you will be paired in each situation with a different person who will also get a reward that will depend on you choice or on the combination of your and his/her own choice. You will not be told to whom you are matched with during or after the experiment, and he/she will not be told who you are either during or after the experiment.

### Situation 1 [DG]

In this task there are two subjects: Person A and Person B. Person A has to decide what portion, if any, of 100 experimental points he/she wants to transfer to Person B. Person B does not have any decision to make, the final distribution of points depends only on Person A. If Person A transfers 0 points to Person B, Person A keeps all his/her endowment of 100 experimental points and Person B will get 0 points; if Person A transfers 10 points to Person B, Person A will get 90 points and Person B 10, and so on. You will play the role of Person A and Person B. At the end we will randomly pick one of the two roles and, if this game will be selected, you will be paid accordingly.

Now you are Person A. Your decision is a simple one: what portion, if any, of 100 experimental points, you want to transfer to Person B? Remember, your choice can be anywhere from 0 to 100, in 10 points increments (points will be converted in cash: 6 experimental points = €1).

Now it is time to make your decision.

**How much do you want transfer to Person B?** [ ___ ]

**Situation 2 [UG]**

There are two players in this game: Person A and Person B. Person A has 100 experimental points as initial endowment and he/she must decide how much to send to Person B. In turn, person B may accept or reject Person A's offer. If Person B accepts, he/she gets the money that Person A sent, and Person A keeps the remaining points (100 minus the amount sent); if Person B rejects Person A's offer, both get nothing (0 points). Example: if Person A sends 10 points to Person B and Person B rejects that offer, Both A and B get nothing; if Person B accepts Person A's offer, he/she will get 10 points and Person A 90 (100 minus 10). You will make decisions both as Person A and as Person B.

You will play both the role of Person A and Person B. At the end we will randomly pick one of the two roles and, if this game will be selected, you will be paid accordingly.

Now you are Person A. Your decision is a simple one: how many, if any, of 100 experimental points you want to transfer to Person B? Remember, your choice can be anywhere from 0 to 100, in 10 points increments (points will be converted in cash: 6 experimental points = €1).

***Control questions.***

Now verify if you have understood the game.

You are Person A and assume that your initial endowment is 10 points.

1. You send to Person B 3 points. Person B accepts your offer. How much do you get?

- You get…

- Person B gets…

2. You send to Person B 4 points. Person B rejects your offer. How much do you get?

- You get…

- Person B gets…

You are Person B and assume that initial endowment of Person A is 10 points.

3. Person A sends you 2 points. You reject that offer. How much do you get?

- You get…

- Person A gets…

4. Person A sends you 4 points. You accept the offer. How much do you get?

- You get…

- Person A gets…

**You are Person A. Your initial endowment is 100 experimental points.**

**How much of your initial endowment do you want to send to Person B (in 10 points increments)?**

___

**You are Person B. Initial endowment of person A is 100 experimental points. Person A sends you:**

- 0, do you accept or reject? [ YES / NO ]
- 10, do you accept or reject? [ YES / NO ]
- 20, do you accept or reject? [ YES / NO ]
- 30, do you accept or reject? [ YES / NO ]
- 40, do you accept or reject? [ YES / NO ]
- 50, do you accept or reject? [ YES / NO ]
- 60, do you accept or reject? [ YES / NO ]
- 70, do you accept or reject? [ YES / NO ]
- 80, do you accept or reject? [ YES / NO ]
- 90, do you accept or reject? [ YES / NO ]
- 100, do you accept or reject? [ YES / NO ]

**Situation 3 [TG]**

There are two players in this game: Person A and Person B. Person A has 50 experimental points as initial endowment and he/she have to decide how much of this amount, if any, he/she wants to send to person B. Person B will receive that amount multiplied by 3. For instance, if Person A sends 10 points to Person B, Person B will receive 30 points; if Person A sends 20 points, Person B will receive 60 points, and so on. In turn, Person B will have to decide how much of amount received, if any, he/she wants to send back to Person A. You will make decisions both as Person A and as Person B. If this situation will be drawn to be paid at the end of this session, we will pay you for one of two roles (A or B), selected randomly (6 experimental points = €1). Person A's earnings will be equal to: initial endowment minus (-) no. points sent to Person B plus (+) points received back by Person B. Person B's earnings will be equal to: points sent by Person A multiplied by 3 minus (-) points sent back to person A.

***Control questions***

Now verify if you have understood the game.

You are Person A and suppose that your initial endowment is 10 points.

1. If you send 3 points to Person B, how much does person B get?

- Person B gets...

2. If you send 4 points to Person B and Person B re sends you 0, how much do you get?

- You get...

- Person B gets...

Now you are Person B and suppose that initial endowment of person A is 10 points.

3. Person A sends you 2 points, how much do you receive?

- You get...

4. Person A sends you 5 points and you re-send 0 points, how much do you get?

- You get...

- Person A gets...

**You are Person A and your initial endowment is 50 experimental points.**

**How much of your initial endowment of 50 experimental points do you want to send to Person B (in 10 points increments)? ___**

**You are Person B and the initial endowment of Person A is 50 experimental points. If Person A sends you:**

- 10 (so you receive 30). How many points do you send back in increments of 10 experimental points ? __

- 20 (so you receive 60). How many points do you send back in increments of 10 experimental points ? __

- 30 (so you receive 90). How many points do you send back in increments of 10 experimental points ? __

- 40 (so you receive 120). How many points do you send back in increments of 10 experimental points ? __

- 50 (so you receive 150). How many points do you send back in increments of 10 experimental points ? __

**Situation 4 [PD]**

There are two players in this game: 'YOU' and the 'Other' player. Each of you has two options: Action C and Action D. In order to play the game, both of you simultaneously choose one of your actions. Remember your earnings depend both on your choice and the other player's choice. Your choices will give you the chance to get a certain number of experimental points that will be converted in money (6 experimental points = €1). If you and the other player play C, both of you will get 60 experimental points; if you play C and the other player plays D, you will get 30 points and the other player will get 90 points; if you and the other player play D, both of you will get 40 points; if you play D and the other player plays C, you will get 90 experimental points and the other player will get 30 points.

The table below summarizes the game (players, actions and payoffs). Your payoffs are indicated before the comma, other's payoff after.

| | | **Other** | |
|---|---|---|---|
| | | ***Action C*** | ***Action D*** |
| **YOU** | ***Action C*** | **60, 60** | **30, 90** |
| | ***Action D*** | **90, 30** | **40, 40** |

***Control Questions***

Now verify if you have understood the game. If the other player plays D and you play C:

- You get...

- Other player gets...

If the other player plays C and you play D:

- You get...

- Other player gets...

**Which action would you like to play, Action C or Action D?** __

***Phase 2 – [C2 condition]***

***As in condition C1 plus information about the other player's level of experience (same level)***

Now starts a new phase of the experiment.

***(for Low types)***

You have a LOW level of experience in laboratory, that is, you have participated in few experiments and, in this part of the experiment you will be paired in each situation with a different person who has your same level of experience and who will also get a reward that will depend on your own choice or both of you choices, depending on the situation. You will not be told who you are matched with during or after the experiment and he or she will not be told who you are either during or after the experiment.

***Control questions.***

Your level of experience is ...

The level of experience of your partner is ...

***(for High types)***

You have an HIGH level of experience in laboratory, that is, you have already participated in many experiments and, in this part of the experiment you will be paired in each situation with a different person who has your same level of experience and, who will also get a reward that will depend on your own choice or both of you choices, depending on the situation. You will not be told who you are matched with during or after the experiment, and he or she will not be told who you are either during or after the experiment.

***Control questions.***

Your level of experience is ...

The level of experience of your partner is ...

**Situation 1 [DG]**

***(for Low types)***

**As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face Person B who has a LOW level of experience as well.**

In this task there are two subjects: Person A and Person B. Person A has to decide what portion, if any, of 100 experimental points he/she wants to transfer to Person B. Person B does not have any decision to make, the final distribution of points depends only on Person A. If Person A transfers 0 points to Person B, Person A keeps all his/her endowment of 100 experimental

points and Person B will get 0 points; if Person A transfers 10 points to Person B, Person A will get 90 points and Person B 10, and so on. You will play the role of Person A and Person B. At the end we will randomly pick one of the two roles and, if this game will be selected, you will be paid accordingly.

Now you are Person A. Your decision is a simple one: what portion, if any, of 100 experimental points, you want to transfer to Person B? Remember, your choice can be anywhere from 0 to 100, in 10 points increments (points will be converted in cash: 6 experimental points = €1).

**Now it is time to make your decision. How much do you want transfer to Person B? ___**

***(for High types)***

**As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face Person B who has a HIGH level of experience as well.**

In this task there are two subjects: Person A and Person B. Person A has to decide what portion, if any, of 100 experimental points he/she wants to transfer to Person B. Person B does not have any decision to make, the final distribution of points depends only on Person A. If Person A transfers 0 points to Person B, Person A keeps all his/her endowment of 100 experimental points and Person B will get 0 points; if Person A transfers 10 points to Person B, Person A will get 90 points and Person B 10, and so on. You will play the role of Person A and Person B. At the end we will randomly pick one of the two roles and, if this game will be selected, you will be paid accordingly.

Now you are Person A. Your decision is a simple one: what portion, if any, of 100 experimental points, you want to transfer to Person B? Remember, your choice can be anywhere from 0 to 100, in 10 points increments (points will be converted in cash: 6 experimental points = €1).

**Now it is time to make your decision. How much do you want transfer to Person B? ___**

**Situation 2 [UG]**

There are two players in the game: Person A and Person B.

***(for Low types)***

Person A has LOW experience and person B has LOW experience as well.

***(for High types)***

Person A has HIGH experience and person B has HIGH experience as well.

***(for Low types)***

You are Person A. Your initial endowment is 100 experimental points. As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face Person B who has a LOW level of experience as well.

**How much of your initial endowment do you want to send to Person B (in 10 points increments)?**

***(for High types)***

You are Person A. Your initial endowment is 100 experimental points. As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face Person B who has a HIGH level of experience as well.

**How much of your initial endowment do you want to send to Person B (in 10 points increments)?**

***(for Low types)***

You are Person B. Initial endowment of person A is 100 experimental points.

As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and in this situation you will have to face Person A who has a LOW level of experience as well. Person A sends you:

- 0, do you accept or reject? [ YES / NO ]
- 10, do you accept or reject? [ YES / NO ]
- 20, do you accept or reject? [ YES / NO ]
- 30, do you accept or reject? [ YES / NO ]
- 40, do you accept or reject? [ YES / NO ]
- 50, do you accept or reject? [ YES / NO ]
- 60, do you accept or reject? [ YES / NO ]
- 70, do you accept or reject? [ YES / NO ]
- 80, do you accept or reject? [ YES / NO ]
- 90, do you accept or reject? [ YES / NO ]
- 100, do you accept or reject? [ YES / NO ]

***(for High types)***

You are Person B. Initial endowment of person A is 100 experimental points.

As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and in this situation you will have to face Person A who has a HIGH level of experience as well. Person A sends you:

- 0, do you accept or reject? [ YES / NO ]
- 10, do you accept or reject? [ YES / NO ]
- 20, do you accept or reject? [ YES / NO ]
- 30, do you accept or reject? [ YES / NO ]
- 40, do you accept or reject? [ YES / NO ]
- 50, do you accept or reject? [ YES / NO ]
- 60, do you accept or reject? [ YES / NO ]
- 70, do you accept or reject? [ YES / NO ]
- 80, do you accept or reject? [ YES / NO ]
- 90, do you accept or reject? [ YES / NO ]
- 100, do you accept or reject? [ YES / NO ]

**Situation 3 [TG]**

There are two players in the game: Person A and Person B.

***(for Low types)***

Person A has LOW experience and person B has LOW experience as well.

***(for High types)***

Person A has HIGH experience and person B has HIGH experience as well.

***(for Low types)***

You are Person A and your initial endowment is 50 experimental points. As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face Person B who has a LOW level of experience as well.

**How much of your initial endowment of 50 experimental points do you want to send to Person B (in 10 points increments)?**

***(for High types)***

You are Person A and your initial endowment is 50 experimental points. As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face Person B who has a HIGH level of experience as well.

**How much of your initial endowment of 50 experimental points do you want to send to Person B (in 10 points increments)?**

***(for Low types)***

You are Person B and the initial endowment of Person A is 50 experimental points. As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face Person A who has a LOW level of experience as well. If Person A sends you:

- 10 (so you receive 30). How many points do you send back in increments of 10 experimental points ?__

- 20 (so you receive 60). How many points do you send back in increments of 10 experimental points ? __

- 30 (so you receive 90). How many points do you send back in increments of 10 experimental points ? __

- 40 (so you receive 120). How many points do you send back in increments of 10 experimental points ? __

- 50 (so you receive 150). How many points do you send back in increments of 10 experimental points ? __

***(for High types)***

You are Person B and the initial endowment of Person A is 50 experimental points. As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face Person A who has a HIGH level of experience as well. If Person A sends you:

- 10 (so you receive 30). How many points do you send back in increments of 10 experimental points ? __

- 20 (so you receive 60). How many points do you send back in increments of 10 experimental points ? __

- 30 (so you receive 90). How many points do you send back in increments of 10 experimental points ? __

- 40 (so you receive 120). How many points do you send back in increments of 10 experimental points ? __

- 50 (so you receive 150). How many points do you send back in increments of 10 experimental points ? __

**Situation 4 [PD]**

There are two players in the game: you and another player you are paired with.

***(for Low types)***

**You have LOW experience and the other player has LOW experience as well.**

Now look the table below and make your decision. As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face a player with a **LOW** level of experience as well.

**Which action would you like to play, Action C or Action D?** __

***(for High types)***

**You have HIGH experience and the other player has HIGH experience as well.**

Now look the table below and make your decision. As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face a player with HIGH level of experience as well.

**Which action would you like to play, Action C or Action D?** __

| | | **Other** | |
|---|---|---|---|
| | | ***Action C*** | ***Action D*** |
| **YOU** | ***Action C*** | **60, 60** | **30, 90** |
| | ***Action D*** | **90, 30** | **40, 40** |

***Phase 3 – [C3 condition]***

***As in condition C1 plus information about the other player's level of experience (different level).***

Now starts a new phase of the experiment.

***(for Low types)***

You have a LOW level of experience in laboratory, that is, you have participated in few experiments and, in this part of the experiment you will be paired in each situation with a different person who has HIGH level of experience, who will also get a reward that will depend on your own choice or both of you choices, depending on the situation. You will not be told who you are matched with during or after the experiment, and he or she will not be told who you are either during or after the experiment.

***Control questions.***

Your level of experience is ...

The level of experience of your partner is ...

***(for High types)***

You have a HIGH level of experience in laboratory, that is, you have participated in many experiments and, in this part of the experiment you will be paired in each situation with a different person who has LOW level of experience, who will also get a reward that will depend on your own choice or both of you choices, depending on the situation. You will not be told who you are matched with during or after the experiment, and he or she will not be told who you are either during or after the experiment.

***Control questions.***

Your level of experience is ...

The level of experience of your partner is ...

**Situation 1 [DG]**

***(for Low types)***

As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face Person B who has a HIGH level of experience, that is, a subject who has participated in many experiments.

In this task there are two subjects: Person A and Person B. Person A has to decide what portion, if any, of 100 experimental points he/she wants to transfer to Person B. Person B does not have

any decision to make, the final distribution of points depends only on Person A. If Person A transfers 0 points to Person B, Person A keeps all his/her endowment of 100 experimental points and Person B will get 0 points; if Person A transfers 10 points to Person B, Person A will get 90 points and Person B 10, and so on. You will play the role of Person A and Person B. At the end we will randomly pick one of the two roles and, if this game will be selected, you will be paid accordingly.

Now you are Person A. Your decision is a simple one: what portion, if any, of 100 experimental points, you want to transfer to Person B? Remember, your choice can be anywhere from 0 to 100, in 10 points increments (points will be converted in cash: 6 experimental points = €1).

**Now it is time to make your decision. How much do you want transfer to Person B? ___**

***(for High types)***

As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face Person B who has a LOW level of experience, that is, a subject who has participated in few experiments.

In this task there are two subjects: Person A and Person B. Person A has to decide what portion, if any, of 100 experimental points he/she wants to transfer to Person B. Person B does not have any decision to make, the final distribution of points depends only on Person A. If Person A transfers 0 points to Person B, Person A keeps all his/her endowment of 100 experimental points and Person B will get 0 points; if Person A transfers 10 points to Person B, Person A will get 90 points and Person B 10, and so on. You will play the role of Person A and Person B. At the end we will randomly pick one of the two roles and, if this game will be selected, you will be paid accordingly.

Now you are Person A. Your decision is a simple one: what portion, if any, of 100 experimental points, you want to transfer to Person B? Remember, your choice can be anywhere from 0 to 100, in 10 points increments (points will be converted in cash: 6 experimental points = €1).

**Now it is time to make your decision. How much do you want transfer to Person B? ___**

**Situation 2 [UG]**

There are two players in the game: Person A and Person B.

***(for Low types)***

Person A has LOW experience and person B has HIGH experience.

***(for High types)***

Person A has HIGH experience and person B has LOW experience.

***(for Low types)***

You are Person A. Your initial endowment is 100 experimental points. As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face Person B who has a HIGH level of experience, that is, she/he has participated in many experiments.

**How much of your initial endowment do you want to send to Person B (in 10 points increments)?**

***(for High types)***

You are Person A. Your initial endowment is 100 experimental points. As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face Person B who has a LOW level of experience, that is, she/he has participated in few experiments.

**How much of your initial endowment do you want to send to Person B (in 10 points increments)?**

***(for Low types)***

You are Person B. Initial endowment of person A is 100 experimental points. As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and in this situation you will have to face Person A who has a HIGH level of experience, that is, she/he has participated in many experiments. Person A sends you:

- 0, do you accept or reject? [ YES / NO ]
- 10, do you accept or reject? [ YES / NO ]
- 20, do you accept or reject? [ YES / NO ]
- 30, do you accept or reject? [ YES / NO ]
- 40, do you accept or reject? [ YES / NO ]

- 50, do you accept or reject? [ YES / NO ]
- 60, do you accept or reject? [ YES / NO ]
- 70, do you accept or reject? [ YES / NO ]
- 80, do you accept or reject? [ YES / NO ]
- 90, do you accept or reject? [ YES / NO ]
- 100, do you accept or reject? [ YES / NO ]

***(for High types)***

You are Person B. Initial endowment of person A is 100 experimental points. As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and in this situation you will have to face Person A who has a LOW level of experience, that is, she/he has participated in few experiments.

Person A sends you:

- 0, do you accept or reject? [ YES / NO ]
- 10, do you accept or reject? [ YES / NO ]
- 20, do you accept or reject? [ YES / NO ]
- 30, do you accept or reject? [ YES / NO ]
- 40, do you accept or reject? [ YES / NO ]
- 50, do you accept or reject? [ YES / NO ]
- 60, do you accept or reject? [ YES / NO ]
- 70, do you accept or reject? [ YES / NO ]
- 80, do you accept or reject? [ YES / NO ]
- 90, do you accept or reject? [ YES / NO ]
- 100, do you accept or reject? [ YES / NO ]

**Situation 3 [TG]**

There are two players in the game: Person A and Person B.

***(for Low experience participants)***

Person A has LOW experience and person B has HIGH experience.

***(for High types)***

Person A has HIGH experience and person B has LOW experience.

***(for Low types)***

You are Person A and your initial endowment is 50 experimental points. As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face Person B who has a HIGH level of experience that is, she/he has participated in many experiments.

**How much of your initial endowment of 50 experimental points do you want to send to Person B (in 10 points increments)?**

***(for High types)***

You are Person A and your initial endowment is 50 experimental points. As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face Person B who has a LOW level of experience that is, she/he has participated in few experiments.

**How much of your initial endowment of 50 experimental points do you want to send to Person B (in 10 points increments)?**

***(for Low types)***

You are Person B and the initial endowment of Person A is 50 experimental points. As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face Person A who has a HIGH level of experience, that is, she/he has participated in many experiments. If Person A sends you:

- 10 (so you receive 30). How many points do you send back in increments of 10 experimental points ? __

- 20 (so you receive 60). How many points do you send back in increments of 10 experimental points ? __

- 30 (so you receive 90). How many points do you send back in increments of 10 experimental points ? __

- 40 (so you receive 120). How many points do you send back in increments of 10 experimental points ? __

- 50 (so you receive 150). How many points do you send back in increments of 10 experimental points ?__

***(for High types)***

You are Person B and the initial endowment of Person A is 50 experimental points. As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face Person A who has a LOW level of experience, that is, she/he has participated in few experiments.

If Person A sends you:

- 10 (so you receive 30). How many points do you send back in increments of 10 experimental points ?__

- 20 (so you receive 60). How many points do you send back in increments of 10 experimental points ?__

- 30 (so you receive 90). How many points do you send back in increments of 10 experimental points ?__

- 40 (so you receive 120). How many points do you send back in increments of 10 experimental points ?__

- 50 (so you receive 150). How many points do you send back in increments of 10 experimental points ?__

**Situation 4 [PD]**

There are two players in the game: you and another player you are paired with.

***(for Low types)***

You have LOW experience and the other player has HIGH experience.

Now look the table below and make your decision. As you know, you have a LOW level of laboratory experience, that is, you have participated in few experiments and, in this situation you will have to face a player with a HIGH level of experience, that is, a subject who has participated in many experiments.

**Which action would you like to play, Action C or Action D? ____**

***(for High types)***

You have HIGH experience and the other player has LOW experience.

Now look the table below and make your decision. As you know, you have a HIGH level of laboratory experience, that is, you have participated in many experiments and, in this situation you will have to face a player with a LOW level of experience, that is, a subject who has participated in few experiments.

**Which action would you like to play, Action C or Action D? ____**

| | | **Other** | |
|---|---|---|---|
| | | ***Action C*** | ***Action D*** |
| **YOU** | ***Action C*** | **60, 60** | **30, 90** |
| | ***Action D*** | **90, 30** | **40, 40** |

**Appendix B:**

**Table APPENDIX**. Experience Effect. Summary and Results (all games - C1)

| Games | Subjects | Mean | Std. Dev | Median | Min | Max | MWU - Z | p-value |
|---|---|---|---|---|---|---|---|---|
| Dictator Game | High | 27.5 | 22.6 | 30 | 0 | 80 | 0.815 | 0.415 |
| | Low | 31.1 | 20.6 | 40 | 0 | 60 | | |
| Ultimatum Game Proposer | High | 39.6 | 10.4 | 40 | 10 | 60 | - 0.755 | 0.450 |
| | Low | 37.9 | 10.4 | 40 | 0 | 100 | | |
| Ultimatum Game *MAO* Responder | High | 29.3 | 13.9 | 30 | 0 | 50 | -1.022 | 0.307 |
| | Low | 26.6 | 14.7 | 30 | 0 | 50 | | |
| Trust Game Trustor | High | 23.6 | 16.2 | 20 | 0 | 50 | - 0.946 | 0.344 |
| | Low | 21.3 | 16.6 | 20 | 0 | 50 | | |
| Trust Game Trustee *% Average resent* | High | 19.6 | 12.7 | 23.3 | 0 | 42 | 1.072 | 0.283 |
| | Low | 22.9 | 13.4 | 27.1 | 0 | 50 | | |

*Notes*: Columns (8) and (9) are the results of a Wilcoxon-Mann-Whitney Nonparametric test.

| Games | Subjects | Defection Share | Std. Dev | Median | Min | Max | $X^2$ | p-value |
|---|---|---|---|---|---|---|---|---|
| Prisoner's Dilemma | High | 0.57 | 0.5 | 1 | 0 | 1 | 0.496 | 0.481 |
| | Low | 0.63 | 0.49 | 1 | 0 | 1 | | |

*Notes:* Columns (8) and (9) are the results of Chi-square test, Pearson chi2(1).