"I" on You: Identity in the Dictator Game*

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Abstract

We study a giver's generosity depending on her relationship with the recipient and the observer. We assign different group identities to the players using a variation of the minimum-group paradigm, and test the effect of group memberships on altruistic giving in the dictator game with a passive observer. The results show that the dictator gives the least when she is from a different group than the other two. We further show that dictators give more when there is no observer. This is driven by male subjects who react more to the presence of the observer.

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1 Introduction

People contribute to charities for various reasons. Ever since its introduction to economics by Forsythe et al. (1994), the dictator game has become one of the most powerful tool to measure altruism among people. Though theoretical prediction for a purely rational dictator is not to give at all, decades of experimental studies in the laboratory have pointed out the fact that "typically more than 60 percent of subjects (dictators) pass a positive amount of money, with the mean transfer roughly 20 percent of the agent's endowment" (Fershtman et al., 2012).

One motivation for giving could be due to "social preferences" such that people who have a taste for fairness or inequity-aversion between themselves and who they contribute to (Bolton and Ockenfels, 2000; Fehr and Schmidt, 1999). Another motivation when actions are observed either by oneself or others is image concern (Bénabou and Tirole, 2006). People simply wish to look generous. However, the effect of such preferences might differ in the relationship people form with the receivers and potential observers. Even if there is a minimum difference in identity, people show more favoritism towards those who they feel closer with compared to those who are emotionally more remote (Chen and Li, 2009).

Our study investigates the effect of the interaction between the presence of a third-party (observer) and the relationship among dictator-recipient-observer on dictators' altruistic behavior. Does it matter whether the recipient and/or the observer is a socially close person or distant? These questions are crucial in charitable giving or the fundraising procedures where prosocial behaviors are inevitably observed. In many non-governmental organizations, for example, volunteers go to meetings or conduct activities in teams where volunteering work is conducted with face-to-face interactions. Donation solicitors often come to knock on donors' doors, etc. In other occasions, thanks to the popularity of social media, donors can even make their donations public on their social media pages (Castillo et al., 2014).

Theoretically, it is not perfectly clear in which directions the *interaction* effect will go with the dictator's giving. For instance, being friends with the observer might boost the donation to show kindness towards a random recipient. However, she might give nothing to the recipient, knowing that the observer as a friend has known her so well throughout the years and that's why they became friends.

We answer this question with a laboratory experiment. Unlike naturally-occurring data sets which might involve self-selection and hence possible endogeneity problems that should be taken carefully into account, the laboratory offers us the luxury to explore the causal effect of the interaction between having an observer in the dictator game and different relationships among players on dictators' altruism. By varying the relative remote-close relationship among the three players and comparing the dictators' behavior in each possible scenario, we know whether a socially-close observer or recipient make the dictator more altruistic.

There are three stages in the experiment. During the first two stages, two groups are generated following a variation of the minimum group paradigm, then they go through several tasks to strengthen their group identities. The tasks are followed by a one-shot dictator game with three players: a dictator, a recipient and an observer. We manipulate group compositions in the following four treatments: either all three players are from the same group, or one of the three roles belong to another group than the other two players. The group composition in the dictator game is common knowledge to the subjects. In addition, we conduct three control treatments: one treatment with no group identity with 3 players, and two with group identities but without the observer.

Our results show that both the presence of the observer and different group identities matter. Firstly, dictators react to the in-group members (from their own group), either as a recipient or as an observer. Compared to the situation where both the recipient and the observer are from a different group, dictators give significantly more to the recipient in other three treatments, conditional on giving. However, having a socially closer recipient and/or observer does not significantly increase the average amount of giving and the percentage of non-selfish dictators who give a positive amount. Secondly, our analysis shows that the presence of an observer significantly reduces the average amount of givings. There are significantly more non-selfish dictators in treatments without observers. We give several possible explanations for this finding, including the payment scheme of the observer and gender differences in reacting to observers (see Section 5 for a discussion).

Our paper adds to the literature by investigating how it matters by *whom* we are observed. Previous literature either focused on how the pure presence of an observer influences behavior,

or how different group identities influence behavior towards group members, or members from the other groups. To the best of our knowledge, how the connection between these two branches affects social preferences are not yet fully studied. However, it is an important empirical question whether people behave differently when the identity of those who receive the donations or those who observe them varies.

It can be helpful to form a better understanding how philanthropic behavior evolves depending on the relative closeness of the interacting parties. Our lab experiment provides a first step to this understanding that could be further tested in the field for charitable giving, or other social interactions where a third-party observer might be involved.[1]

This paper is organised as follows. Section 2 discusses the related literature. We present the experimental design in Section 3. Section 4 describes the experimental results, and Section 5 concludes.

2 Literature review

What are the reasons of pro-social behavior other than material benefits for doing so? Recent studies on social preferences generally narrow down the motives to two broad categories: intrinsic motivation and image motivations (both self-image and social-image). Intrinsic motivation is the value of giving per se, such as pure altruism or warm-glow (Andreoni, 1990) or other forms of prosocial preferences (see Ernst and Schmidt, 2003 for a review). Image motivation is an individual's tendency to be motivated by self-respect or social reputation (Bénabou and Tirole, 2006). Therefore, image motivation captures others' opinion in utility, i.e., the desire to be liked and respected by oneself or by others under social pressure (Ariely et al., 2009).

When there are inter-personal or inter-group interactions, social image concerns are more prominent, especially in forming a norm of equal division of monetary rewards (Andreoni and Bernheim, 2009), sustaining a corporate environment where agents are motivated by unconditional high payments and principals who are worth impressing (Ellingsen and Johannesson,

[1]List and Price (2009) investigated the effect of social ties in charitable giving in a natural field experiment. They found that minorities had a lower success in securing donations independently whether they were asking a majority or a minority household.

2008), raising charitable-giving in their own social groups (Scharf and Smith, 2016), and in various field settings such as education, consumption and investment decisions, effort in the workplace, voting and so on (see Bursztyn and Jensen, 2017 for a survey).

It has been documented by some economic experiments that a mere subtle clue of an (anonymous) observer affects generosity. Haley and Fessler (2005) conducted five dictator games, manipulating both auditory cues of the presence of others (via the use of sound-deadening earmuffs) and visual cues (via the presentation of stylized eyespots). As predicted, eyespots substantially increased generosity, despite no differences in actual anonymity; when using a computer displaying eyespots, almost twice as many participants gave money to their partners compared with the controls. This finding is extended by Buchanan et al. (2017) and Ekstrom (2012) into the field settings. The former brought the dictator game in the field by video-recording dictators in a shopping mall. This experiment has a lower degree of anonimity compared to standard experiments, and finds a higher level of generosity. The latter research conducted a field experiment where customers in a Swedish supermarket chain needed to decide whether or not to keep the money from recycled cans and bottles or to donate it to a charity organization. When there was a picture of human eyes on recycling machines, customers donated 30 percent more after controlling for store and day fixed effects. Those experiments suggest that subtle social cues could invoke reputation concerns in humans. However, this effect of eye cues increasing altruism seems to last only among adult subjects and not with children (Vogt et al., 2015).

A small yet fast-growing strand of literature has focusing on the interactions between third-party intervention and social ties. The marriage between social ties (or social cohesion, or group identity, etc) and social image concerns seems natural. Experimental studies in economics has long documented the importance of social ties in various games. After all, a large part of altruistic norm is shaped by parochialism – a preference for favoring the members of one's ethnic, racial or language group (Bernhard et al., 2006), in which indigenous groups in Papua New Guinea protect ingroup victims more than outgroup victims when they were punishers. Reuben and Van Winden (2008) used a three-player version of *power-to-take* game (with one take authority and two respondents, who are either friends outside the lab or not

- so groups of two for invitation) to investigate the effects of friendship in the laboratory. They find that if being hurt with a friend rather than with a stranger, people destroy more often. Friends punish the proposer more than strangers and they are more likely to coordinate on punishment. Gächter et al. (2015) used the oneness measure to elicit social ties, and find positive relationship between a higher oneness and higher equilibria in the weak-link game.

Candelo et al. (2018) investigated the effects of social distances on dictator giving in a few Mexican villages, where social distances are distinguished by intra- and inter-household transfers: intra-household transfers correspond to family members, whereas inter-household transfers correspond to members from the same community and strangers. Results show that villagers give more to their family members than to the others, but there are no significant differences in giving to a community member or to a stranger.

3 Experimental design

In this section we describe the experimental design. Our experiment consists of three parts. In the first part, we generate two groups using a variation of the minimum group paradigm (Tajfel, 1970; Tajfel et al., 1971; Chen and Li, 2009). Subjects are presented by three pairs of paintings and they express their preferences for each painting by allocating in total 100 points between each pair. The higher score a painting has, the more preferred. After reviewing paintings, subjects are divided into two equally large groups based on their overall scores for the reviewed paintings. We order them based on their scores, and one group consists of half of the participants in the given session that have the highest scores for the painting on the left, and the other half belongs to the other group. They are told that they are assigned to the group with members who have similar tastes for paintings. The same procedure is used in Zheng et al. (2019), in which subjects show significantly more closeness towards people with the same esthetic taste.[2]

In the second part of the experiment, subjects complete three tasks. The purpose of these tasks is to generate feelings of closeness towards others. More specifically, we wish our subjects to exhibit closeness towards people from the same group and remoteness towards people from

[2]See Appendix A and B and the appendix in Zheng et al. (2019) for more details of the tasks.

the other group. In the first task subjects need to choose a name for their group. A chat window is open for group members, and they can talk to each other by chatting on the screen. Communication is freestyle and there is no time constraint. Subjects only chat with their own group members. Whenever subjects feel like leaving the conversation, they can exit through clicking on a button. On the subsequent page, subjects vote for the name they prefer, and the group name is determined by the majority rule.

In the second task subjects enter a tournament where the two groups compete against each other. Each subject is shown five pairs of paintings, and they need to judge whether they were painted by a professional adult artist or by a child. For each pair there are four possible answers subjects can choose from (based on the different combinations of two painters and two paintings). For each correct answer subjects earn one point for their group. The group with the higher total points receives the prize: 2 euros for each member. In case of a draw, each subject in both groups receives 1 euro.

The third task is the "Other-other allocation" task (Chen and Li, 2009). Each subject has to distribute 2 euros to two other randomly chosen subjects P1 and P2, in three different scenarios. She is not allowed to distribute money to herself. Depending on the relationship among herself, P1 and P2, there are three scenarios: 1) P1, P2, and herself are from the same group; 2) P1 and herself are from the same group and P2 is from a different group; and 3) both P1 and P2 are from the other group. At the end of the experiment, one of the three scenarios is randomly drawn, and subjects receive payment according to this draw. The random matching among subjects is restricted such that each subject receives money from two different other subjects, and that they do not allocate money to those from whom they receive money.[3]

The third part of the experiment is a one-shot dictator game. Subjects are either grouped in pairs (with a dictator and a recipient) or in triads (with a dictator, a recipient and an observer). In both cases, the dictator decides to divide 14 euros between the recipient and herself (see screenshot in Figure 1). The recipient's payoff in this part is simply determined by the dictator's decision. Neither the recipient nor the passive observer (if exists) can alter the dictator's decision. The presence of the observer is one treatment variation. Subjects in all treatments are aware of the group composition in the third part. Observers are passive,

[3]Detailed description of the task can be found in the instruction in Appendix A.

Figure 1: Screenshot of part 3

but they observe the dictator's choice as well. Their payment is either 5 or 9 euros with a 50% probability and is independent from the dictator's choice. All subjects need to make a decision as if they were the dictator. They are informed that at the end of the experiment each player in their pair or triad has an equal chance to be the dictator and have their decision payoff-relevant.

In the triads we implement four main treatment scenarios depending on the relationship among the players: In treatment ALL_IN, all of the players are from the same group; in treatment OBS_OUT, the dictator and the recipient are from the same group; in treatment REC_OUT, the dictator and the observer are from the same group; and in treatment DICT_OUT, the recipient and the observer are from the same group. Additionally we implement three 'control' treatments: in NO_ID treatment we do not assign group identity (the procedure for parts 1 and 2 are nevertheless the same). In treatments 2_IN and 2_OUT there are no observers. In the former both the dictator and the recipient are from the same group, while they are from different groups in the latter. The group composition (which role belongs to which group) is also known to all players in the game. The group membership and the number of subjects in each treatment are summarized in Table 1 and also in Figures 13 and 14 in Appendix C.

At the end of the experiment, subjects complete an exit survey that collects personal characteristics such as age, gender, major, race, and closeness towards people from their own group and towards people from the other group. Only after filling in the survey can subjects

Treatment	ALL_IN	OBS_OUT	REC_OUT	DICT_OUT	NO_ID	2_IN	2_OUT
Same group	Dictator Recipient Observer	Dictator Recipient	Dictator Observer	Recipient Observer	–	Dictator Recipient	–
# Obs.	36	34	34	34	24	24	24

Notes: Group composition is differentiated by group identity. There are seven treatment groups. In treatment ALL_IN, all of the players are from the same group; in treatment OBS_OUT, the dictator and the recipient are from the same group; in treatment REC_OUT, the dictator and the observer are from the same group; in treatment DICT_OUT, the recipient and the observer are from the same group; and when all three players do not know which group they are from, they are in NO_ID treatment. In 2_IN treatment, the dictator and the receiver are from the same group and in 2_OUT treatment, the dictator and the receiver are from different groups. There are no observers in the latter two treatments.

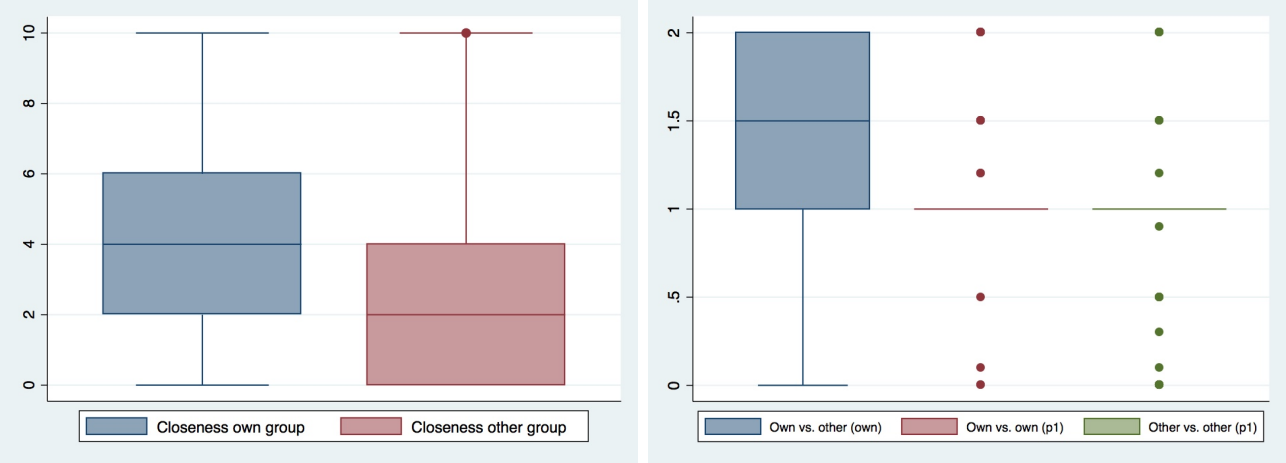
Table 1: Summary of treatment groups and the number of observations

see the final results and their payoff information.

The experiment was conducted in the CREED laboratory at the University of Amsterdam, and was programmed with PHP/MySQL. In total, we recruited 210 subjects through our recruiting system. We ran a between subject design, subjects participated in only one treatment. Note that due to our elicitation method, in treatments OBS_OUT, REC_OUT and DICT_OUT each subject from each triad took part of a different treatment depending on the group-composition. For the three parts of the experiment, we presented the experimental instructions separately on the computer screen, and subjects could read them at their own pace. There were practice questions for the subjects to answer to ensure that they understood the rules in the experiment. We ran in total ten sessions with each session lasting for about 35 minutes on average. Approximately, each subject earned 14.9 euros, including a 5 euros show-up fee.

4 Results

This section presents the experimental results. Section 4.1 presents the results of the manipulation of group identity. In Section 4.2 we discuss how dictators' decision is affected by the identity of the peers they are paired with. Section 4.3 elaborates on the observer effect, whereas Section 4.4 describes driving factors behind our results. Descriptive statistics about our subject pool in the different treatments are relegated to Appendix C.



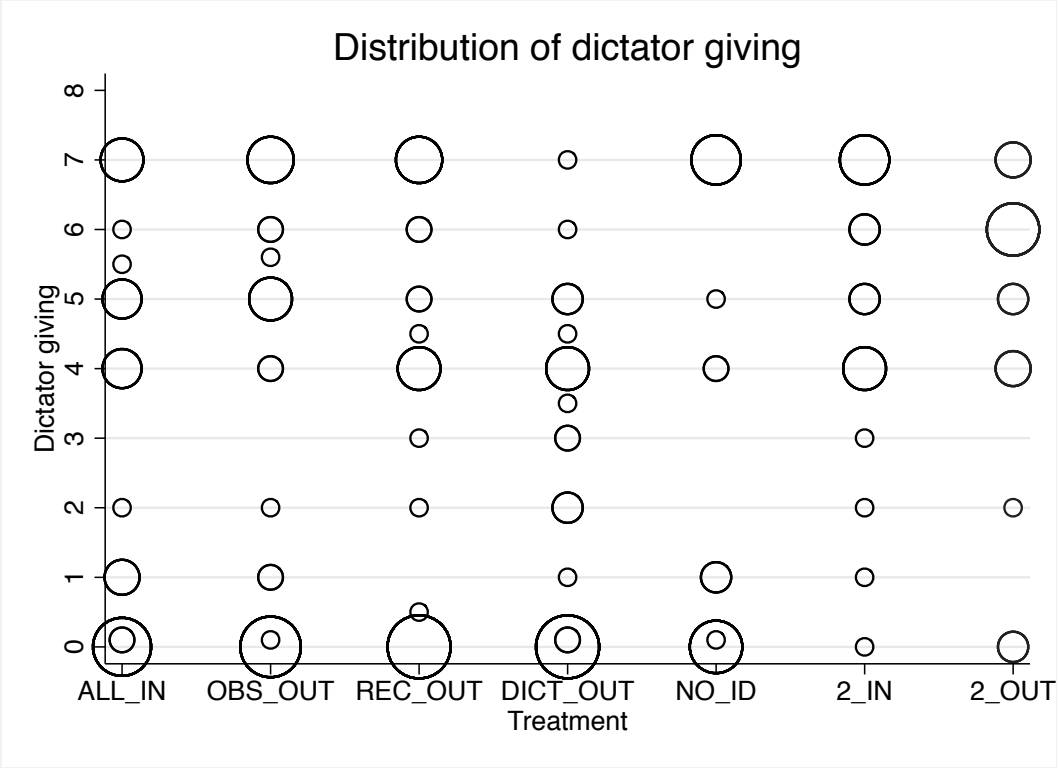
Notes: The left panel shows the closeness measure. The right panel shows allocations in the other-other task for player 1 in the three different scenarios. The amount given to player 2 is ommitted, as it is 2 euros minus the amount given to player 1. The first column shows distribution between a random member of the own group and a random member of the other group. Column 2 (3) depicts allocation between two randomly chosen members of the own (other) group.

Figure 2: Closeness measure (left panel) and allocation in the "Other-other allocation" task (right panel)

4.1 Manipulation of identity

Our manipulation of group identity with a trivia task seems to work to generate distinct feelings towards those from the same group compared to those from a different group. Both the "other-other allocation" task and the closeness survey measure show that subjects treat their own group members and other group members differently. Figure 2 shows that subjects feel closer towards their own group members (left panel) and give more money to a random in-group member (right panel, column 1). Both differences are significant at 1% level according to the Wilcoxon signed-rank test (Wilcoxon thereafter, $p = 0.000$). At the same time, they do not distinguish between two random members of the same group, either both from their own group or both from the other group (right panel, columns 2 and 3).[4] In the former case 195 of the 210 subjects divide the money equally, whereas in the latter 180. This number is only 89 in the case when subjects need to divide money between somebody from their own group and somebody from the other group. Here the data are pooled with all treatment groups, but the same picture emerges if we divide the data by treatment.

[4]Even though the average allocated amount for player 1 is close to one in both cases, subjects give weakly significantly more to one of the players. The average for player 1 is 1.019 for splitting within own group, whereas it is 0.96 for splitting within the other group ($p = 0.07$ for both cases, Wilcoxon test).



Notes: The vertical axis is the amount given to the recipient (up to 14 euro). Marker sizes are proportional to the number of observations at the given amount.

Figure 3: Distribution of amounts dictators give across treatment groups

Treatment	# of players	Mean giving	% of positive giving	Mean positive giving
ALL_IN [36]	three players	2.91 (2.77)	69 (47)	4.19 (2.37)
OBS_OUT [34]		3.20 (2.95)	65 (49)	4.94 (2.15)
REC_OUT [34]		3.09 (2.86)	62 (49)	5 (1.86)
DICT_OUT [34]		2.15 (2.22)	62 (49)	3.49 (1.79)
NO_ID [24]		3.00 (3.20)	63 (49)	4.81 (2.74)
2_IN [24]	two players	4.96 (2.03)	96 (20)	5.17 (1.77)
2_OUT [24]		4.79 (2.21)	88 (34)	5.48 (1.29)

Notes: Numbers of observations are in square brackets. Standard deviations of giving are between parentheses.

Table 2: Dictator giving by treatments

4.2 Effects of group identity

The main question of interest is how the dictator distributes the endowment between the recipient and herself depending on the group composition. Figure 3 displays the distribution of the given amount in different treatments and Table 2 presents the average giving (including zeros), the percentage of positive giving, and the average giving if the dictator gives more than zero.

First we restrict our attention to the four main treatments: the three-person groups with group identity plus the fifth row, the three-person groups without identity.[5] Looking at both the mean giving and the distribution of the giving in Table 2, we can see that the first three and NO_ID treatments are very similar. These are the treatments in which the dictator is paired with *at least* one member of her own group, or no identity is mentioned in the dictator game. In these four treatments besides giving nothing, there is a substantial share of dictators giving exactly half of their endowments, resulting in equal division (see Figure 3). Note that in the ALL_IN and OBS_OUT treatments there is a third mass at giving 5 which was the lower bound of the observer's payoff. On the other hand, the pattern for the DICT_OUT treatment changes. Dictators in this treatment give on average less to the recipients than in the other four treatments. This result is not due to having more selfish dictators, as the fraction of dictators giving zero is the same across the four treatments.

Looking at pairwise treatment differences among these five treatments, we do not find any significant difference in the mean giving amount (Mann-Whitney test, MW thereafter), neither in the rate of positive giving (according to the proportion test) at 10%-level. However, if we restrict ourselves to the mean positive giving, we find that dictators in DICT_OUT treatment give significantly less compared to the OBS_OUT, REC_OUT and NO_ID treatments (DICT_OUT vs. OBS_OUT $p = 0.007$, DICT_OUT vs. REC_OUT $p = 0.012$ and DICT_OUT vs. NO_ID$p = 0.07$, MW test) while there are no significant differences in the other treatments. This observation can be summarised in our first result:

Result 1 *With at least one in-group person or with unknown group identity, no matter she is the recipient or the observer, the dictator contributes a significantly higher positive amount compared to the case when both the recipient and the observer are from a different group.*

4.3 Observer effects

In order to assess how dictators change their behavior in the presence of an observer, we added two treatments with group identity, but only with two roles: the dictator and the receiver.

[5]It is worthwhile to notice that in these five treatments, it is consistent with the statistics mentioned in the Introduction that more than 60 percent of subjects pass a positive amount of money to the recipient, and they give roughly 20 percent of the agent's endowment in the dictator game (Fershtman et al., 2012).

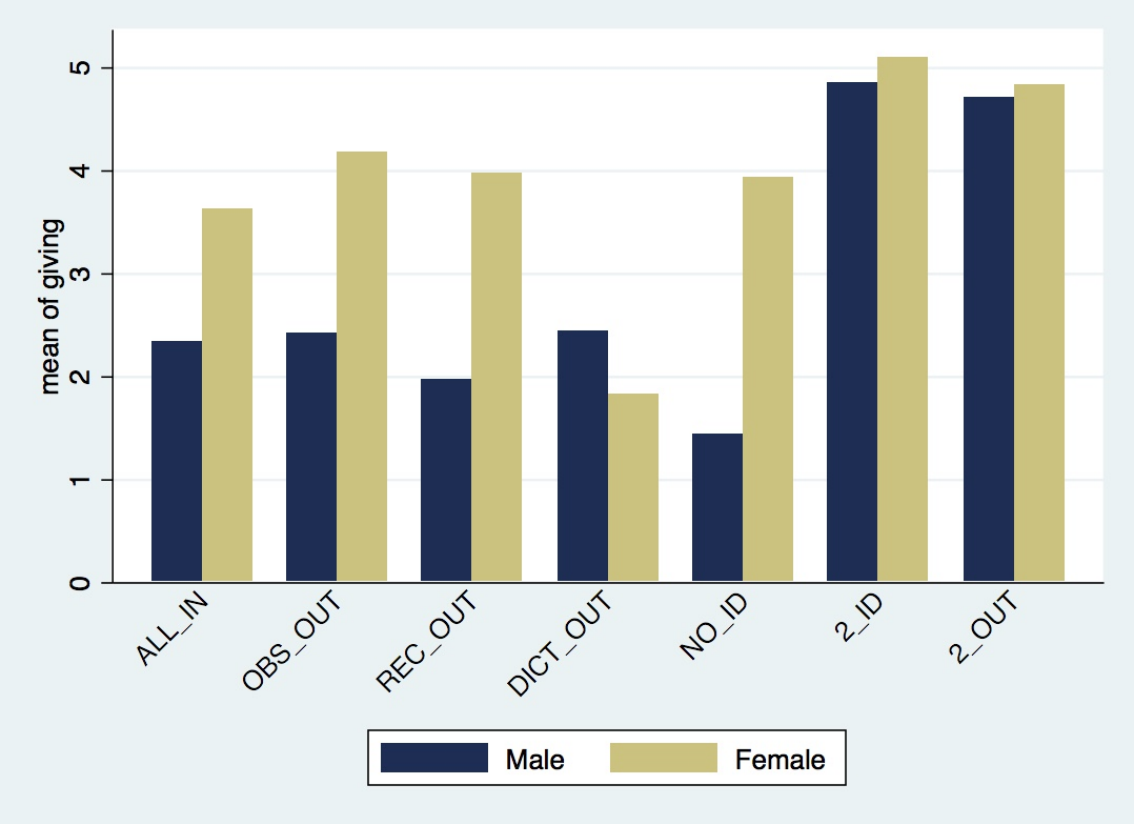
Looking at the last two columns of Figure 3 we see that the distribution of giving in this case is substantially different from the cases of the three-player groups. There is a higher fraction of dictators giving a positive amount, and also they give more when they give. However, identity does not seem to matter here: the mean giving, the percentage of positive giving and the mean positive giving amount are not significantly different from each other in the 2_IN and 2_OUT treatments.

Since we find insignificant differences in the two-person treatments, and also the three-person treatments result in a very similar outcome, we pool the three-players treatments and two-players treatments, respectively, to investigate the effect of the observer. The mean giving amount in Table 2 points out that the presence of observers significantly decreases the dictators' giving (4.875 vs. 2.86 out of 14 euros, $p = 0.000$, MW). We find thus that having an observer gives a huge impact on dictators' behavior in an unexpected direction. We will come back to this point in the discussion (in Section 5).

Are dictators more generous when they give? Or are there simply less selfish dictators in those treatments (i.e. do we have more dictators giving positive amounts)? The answer is the latter. In the case of no observer (2-players treatments), about 90% of dictators give a positive amount to the receiver, irrespective of whether they are grouped with somebody from the same group or with somebody from the other group; this ratio is 40% more than that in 3-players treatments (2-players treatments vs. 3-players treatments: $p = 0.0002$, proportional test.). Among dictators who give a positive amount, we only find a weakly significantly higher amount in the two-person treatments compared to the three-person treatment (2-players treatments vs. 3-players treatments: $p = 0.053$, MW).[6] These findings can be summarised in the following result:

Result 2 *Dictators on average give significantly less in the presence of an observer due to the existence of significantly more selfish dictators who give nothing to the receiver.*

[6]One could argue that our results are driven by the fact that the DICT_OUT treatment differs from the others in the mean (positive) giving amount. This is indeed the case for the mean positive giving, but not for the other two results. For robustness check we leave this treatment out from the pooling, and consider only the other four three-person treatments. The weakly significant result dissappears (2-players treatments vs. 3-players treatments except DICT_OUT: $p = 0.32$, MW test), but the other two results hold on the same significance level.



Notes: This figure plots the mean amount of giving, for males and females in each treatment, respectively. The vertical axis is the amount of giving (up to 14 euro) by dictators in the dictator game. The number of male subjects in the order from left to right in the figure: 20/36, 19/34, 15/34, 18/34, 9/24, 13/24, 7/24.

Figure 4: Gender differences in the dictators-giving

4.4 Gender differences: an explanation

In order to better understand our results, we turn to important demographics that may play a role in explaining the treatment effects in the experiment. We find only one factor influencing giving rates across treatments: gender. Other characteristics (such as studying economics or not, age, or ethnicity background) seem to be irrelevant. Figure 4 displays the mean amount subjects give in each treatment decomposed by gender. The pattern for females and males is completely different even though there are no significant differences in the closeness measures across treatments ($p > 0.7$, MW), and both females and males report significantly higher closeness towards own group ($p = 0.00$, Wilcoxon test). Males do not seem to react to the identity, but they give more whenever there is no observer present, i.e. in the 2-players treatments. Pairwise comparisons for males within the 3-person treatments and within

the 2-person treatments yield insignificant differences ($p > 0.14$ for all cases, MW). Pooling over 3-person treatments and 2-person treatments we find that males give significantly more when there is no observer ($p = 0.00$, MW).

For females, the picture is completely different. They do not react to the identity within the 2-person treatments ($p = 0.79$, MW), but they do react in case of having an observer. They give significantly less when paired with 2 players from the other group compared to the case when they are paired with at least 1 person from their own group, or when they are paired without identity.[7] Comparing the 3-person treatments and the 2-person treatments we find that females also give significantly more in case when there is no observer ($p = 0.04$ for pooled data, MW); this is mainly driven by the drastically decreased giving in the DICT_OUT treatment. Leaving out this treatment from the 3-players treatments pool makes the significant difference to disappear ($p = 0.25$, MW).[8]

This leads to our third result:

Result 3 *While males seem to only react to the existence of the observer by giving less in that case, females seem to react to the combination of different identities and observer's presence. Specially, when females are grouped with two other-group members, they give significantly less than in any other case.*

5 Discussion

In this paper we investigated how group identity affects giving in a dictator game. We implemented 4 main treatments and 3 control treatments. All subjects went through the same group identity manipulation procedure before playing the dictator game, where we manipulated group composition based on the identity of the dictator, receiver and observer, and whether there was an observer or not. Overall, we observe the following three results. Firstly,

[7] P-values are $p = 0.04$ (DICT_OUT vs. ALL_IN), $p = 0.009$ (DICT_OUT vs. OBS_OUT), $p = 0.02$ (DICT_OUT vs. REC_OUT,) and $p = 0.03$ (DICT_OUT vs. NO_ID), respectively, all with MW tests.

[8] While there have been a number of studies in the past to investigate which gender is more altruistic, the results are very heterogeneous. Some studies find no difference, some find differences in either direction. Niederle gives a comprehensive survey in Kagel and Roth (2016) about gender differences in different settings (see Chapter 8, section IV for altruism). Jones and Linardi (2014) finds that there is a gender difference in image concers as well: females are more likely to behave as an "average" individual when observed. This might explain why females give less when paired with two others from the other group.

group identity seems to matter only in case when subjects are paired with *two* other players from the other group. In that case dictators give less to the recipients. Furthermore, having an observer in the dictator game reduces dictators' donation to the receiver. Treatments with two-players have different distributions compared to the three-players treatments. Dictators in these treatment are more likely to give and they usually give a higher amount of the endowment to the receiver. Finally, the treatment effects of identity seem to be mainly driven by females, whereas the effect of the presence of the observer are mainly driven by males.

Our result on the presence of an observer contradicts most previous literature. A potential explanation could be a consequence of one of our design choices. In the 3-player setting we implemented a lottery payment for the observer: they received either 5 or 9 with equal chance. By doing so the expected average payment in the group was equal to 7. Note however, that the dictator can never achieve total equality among the three players, no matter how she divides the 14 euros. This might have primed her to act more selfishly. On the other hand in case of the 2-player treatments, there is no such priming, dictators do not see any third party payoff when they make their decision. We leave the confirmation of this hypothesis for future research. Related to this explanation, since in our no-observer treatments, there is no "excuse" for dictators to give less (as the possible 5 euros for the observer in the other treatments), potential guilt-aversion might be higher there resulting in a higher rate of giving in the absence of an observer. Even though we cannot disentangle these possible effects, nevertheless our results give an indication on how sensitive findings can be on the different payoff schemes which needs further exploration.

Not all experiments about observers find that being observed is helpful to encourage dictators to give. One possible reason for it could be social distance. Dufwenberg and Muren (2006) find that when dictators are either asked (and they know) to receive their payments in front of a few hundred co-students, or to receive private payments, they give less in the former case when they are observed by co-students. The authors' explanation for this is that they believe by changing the payment environment from a private place to a public area, the players "adapt their self-presentation strategies to the expectations of their audience in order to gain self-approval". Therefore, an alternative interpretation of our experiment could

be that participants in our experiment–especially males–"conform to the economic stereotype of selfishness" and behave more selfishly when there are observers.

Finally, our results suggest that it might be better for charitable giving or in other similar context if at least one person of the same social group monitors their peers' behavior.[9] However, our study is just a first step towards this very important question, as we have only artificially induced group identity. It would be interesting to further investigate the question in the field as well.

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[9]Note that our results are not in line with List and Price (2009) from the field in this respect, but well in line with other lab-experiments demonstrating that social ties matters (see e.g. Reuben and Van Winden, 2008).

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A Experimental Instructions

Instructions

Welcome to our experiment!

This is an experiment in decision-making. The amount of money you earn will depend upon the decisions you make and on the decisions that other people make. This experiment has three parts and in total there are [number of subjects] participants.

Now you have already earned 5 euros for participating today. Your total earnings will be the sum of your payoffs and the participation fee. At the end of the experiment you will be paid IN CASH. Everyone will be paid in private and you are under no obligation to tell others how much you earn.

You will receive separate instructions for the three parts before each part begins. Please read all instructions carefully and do NOT communicate with each other during the experiment. If you have a question, feel free to raise your hand, and an experimenter will come to help you.

Part One

For this experiment, we have randomly assigned you a personal ID (a capital letter). Yours is A. Please remember your ID because you will use it later.

In this part you will view and rate three pairs of paintings. We do this in order to know your preferences for paintings. There is a total of 100 points that you can allocate to each pair of paintings that you see at each time. The more you prefer a painting, the higher the score you should assign to it. You grade paintings with a slider (see below).

Now you can practice with the slider below. The default score is 50 for each painting. If you prefer the painting on the left, simply move the slider to the left and you will see the corresponding score. If you prefer the painting on the right, move the slider to the right. You can always change your preferences before submitting your results.

There are no right or wrong answers in this part. Also, you will not earn money in this

part.

After you decide your preference, click on “confirm" to submit your choice. You will not come back to the previous page.

[Paintings here]

Your score for the paintings on the left is [...], and your score for paintings on the right is [...].

Your rating is among [...] people who have the highest rankings for paintings on the right in today’s experiment.

Based on this (your tastes and preferences of the paintings), we will now separate you into two groups. Later in the second part, you will play games together with people from your group. Also, you will compete against the other group. If there are no questions, you can go to the next part of the experiment.

Part Two

You have three tasks to do in this part. Instructions will be given at the beginning of each task.

The first task is:

Choose a name for your own group.

Since you have found your group members based on similar tastes for paintings, a common name for the group is a good idea. We have prepared three potential names for your group. Before you choose, you will be given a chance to discuss the options with the other group members using a chat box.

The chat box will be opened on the next page. You will be able to chat with the others from your group only, and not with the other group. The other group will not be able to see your chat.

In this part you are going to choose a name for your group from three options. You log in with your personal ID.

You can leave the chat by choosing 'exit chat'. You will then be asked to vote for a name. The name chosen by the majority will be the one used by your group.

Please vote for a name. The majority choice will be your group name.

(A list of names used in the experiment) Choose one from the three candidates for your group: Young Genius! My precious, my! Gifted Artist!

The majority has chosen the group name as the slogan for your lab is [...]. Congratulations. [...]

The second task is a tournament between two groups. The group with the most points in total will receive [number of subjects] euros, to be split equally. This means that if your group wins, you will receive 2 euros as a prize. Otherwise, you will receive nothing for this task. In case of a draw, you will earn one euro each.

The task is called "Who is the painter?"

Everyone will individually be shown five pairs of paintings. Each painting was made either by a young child or by an adult professional artist. All paintings were randomly selected from a pool of 15 paintings by young children and 15 by professional painters. For each pair, there are four possible answers: both paintings are by children; the one on the left is by a child and the one on the right by a professional; left is by a professional and right by a child; or both are by professional painters.

For each correct answer, you score one point for your own group. The points scored by everyone in your group will be added up.

The winning group of this tournament will be announced at the end of the experiment.

[paintings for the tournament here]

The third task in this part is to distribute money to two other randomly chosen participants (we call them participant P1 and participant P2) in this experiment. You never allocate money to yourself.

There will be three scenarios so you need to make in total three decisions. At the end of the experiment, one of the three scenarios will be randomly chosen with equal probabilities. Your decisions will determine earnings for other two participants in the same experiment, so that they will receive the amount of money you allocate to them. Meanwhile, others? decision

under the same scenario will determine the amount of payoff you get from this task. You are matched in such a way that you will not receive money from the same person who receives money from you.

The three scenarios are: (1) Person P1 is from your own group, person P2 is also from your own group. (2) Person P1 is from your own group, person P2 is from the other group. (3) Person P1 is from the other group, person P2 is also from the other group.

To sum up, your task is to divide 2 euros to P1 and P2, in each of the three scenarios. You distribute money from 0 to 2 euros to P1 and P2, who are also participating in the same task. The sum of the amounts P1 and P2 get must be 2 euros. For example, if you decide to distribute 0.5 euro to P1, then P2 should get 1.5 euros (2 - 0.5).

Part Three

This is the last part of the experiment. It is a separate task from the first two parts of the experiment. In this part, you are matched in groups of three. The three of you are playing a simple game. We will refer to the three players as player 1 (decision maker), player 2 (receiver), and player 3 (observer). Note that your role in the game will be determined later.

Player 1 is the decision maker, and players 2 and 3 are inactive, and have no power to alter player 1's decision. Player 1 decides on how to to divide 14 euros between himself/herself and player 2. Player 1 keeps the amount he or she decides and player 2 gets the amount player 1 gives. Player 3 can observe the resulting decision, but his or her earnings are not related to the activities between player 1 and player 2. Player 3 receives either 5 or 9 euros with 50% chance, depending on a lottery.

Now, we will match you with 2 other participants in this experiment. One of the other players you are matched with is from your group, and the other one is from the other group. All participants need to make decisions as if they are player 1 in this game. At the end of the experiment you will be randomly assigned to be player 1, player 2, or player 3 (with each role occurring exactly once in your triple). The probability that you end up in each role is 1/3. If you are player 1, player 2 is from your group, and player 3 is from the other group. Your payoffs are then determined by the implemented roles, and the chosen player 1?s decision (for

players 1 and 2).

Before the third part starts, we would like to ask you a few questions to check your understanding of the instruction. You can return to the instructions for this part on the bottom of this page.

How many roles are there for the task in part 3? - Only one, we are all decision makers, all receiver or all observers. - There are three roles, but I will be only informed afterwards about my role. - There are three roles, and I will know my role before I make a decision.

Are you playing with people from the other group? - No, I am only playing with members of my own group. - Yes, I am playing with people from the other group as well.

Does your choice determine your own payoff for this task? - Yes, always. - No, never. - Only if I am selected to be a decision maker.

If you are selected to be an observer or a receiver, do you have any influence on the outcome? - Yes, as an observer. - Yes, as a receiver. - No.

Please make your decision. Remember, you have 12 euros to split between yourself and player 2; and player 3 will observe your implemented choice if you are chosen to be the decision maker. Both players 2 and 3 are from your group.

Please enter amounts for yourself and player 2 (in increments of 10 cents).

Yourself:

Player 2:

Questionnaire

Please fill out the following questionnaire.

1) Gender:

- Male
- Female

2) Age:

3) What do you consider your racial or ethnic background to be:

- White.

- Black.

- Hispanic.

- Asian.

-Other.

4) Have you participated in a CREED experiment before?

- No.

- Yes, once.

- Yes, more than once.

5) Have you ever done similar tasks (distinguish paintings from professional painters and unprofessional painters) before?

- No.

- Yes, once.

- Yes, more than once.

6) Department where you study:

- Faculty of Economics and Business

- Faculty of Social and Behavioural Sciences-Psychology

- Faculty of Social and Behavioural Sciences-non Psychology

- Faculty of Science

- IIS: beta gamma bachelor

- Faculty of Law

- Faculty of Humanities

- Faculty of Medicine

- Faculty of Dentistry

- Another university

- A Dutch “hogeschool" (HBO)

- Other different places

7) You have done a lot of tasks today, individually and with others. Please rate how closely attached you felt to the different groups throughout the experiment. On a scale of 0 to 10 where 0 means you don't feel any attachment to this group and 10 means you really feel like belonging to this group.

[subjects list their scores for their own group and the other group]

B Paintings in the experiment

Paintings in part one

Figure 5: Painting Pair 1 in Part One

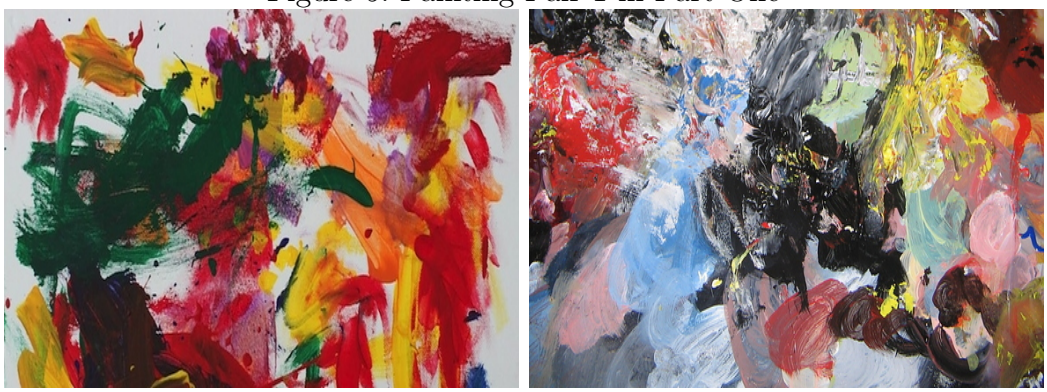
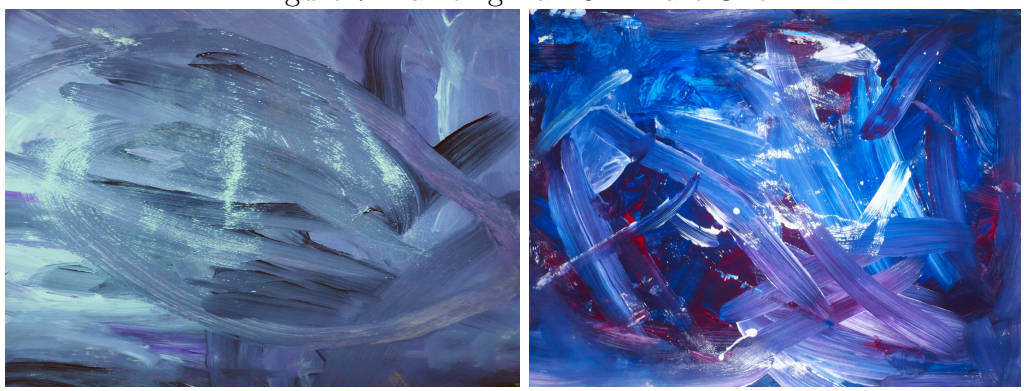


Figure 6: Painting Pair 2 in Part One

Figure 7: Painting Pair 3 in Part One



Paintings in part two

Figure 8: Paintings in Group Tournament: Pair One

Figure 9: Paintings in Group Tournament: Pair Two

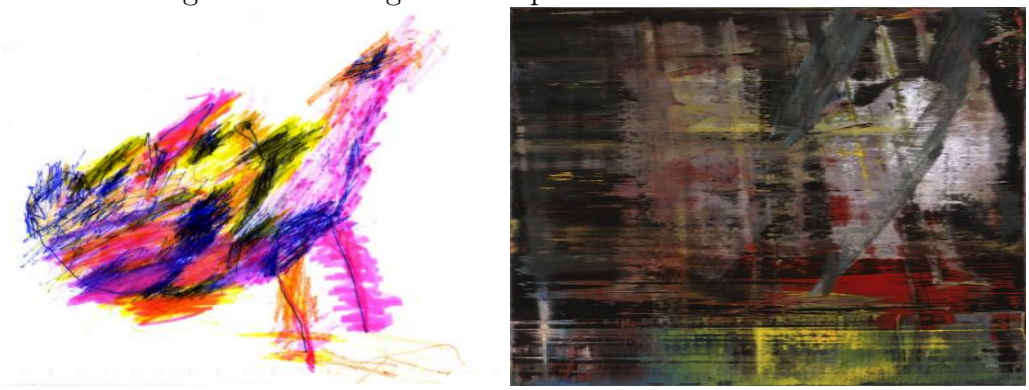


Figure 10: Paintings in Group Tournament: Pair Three

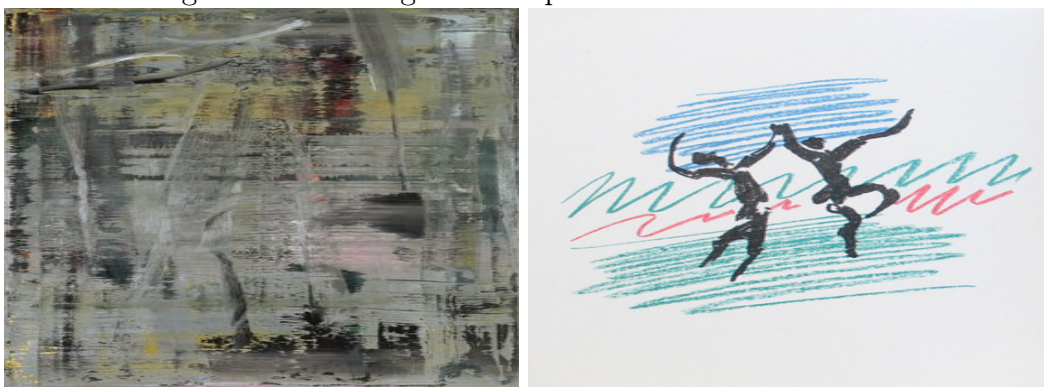


Figure 11: Paintings in Group Tournament: Pair Four

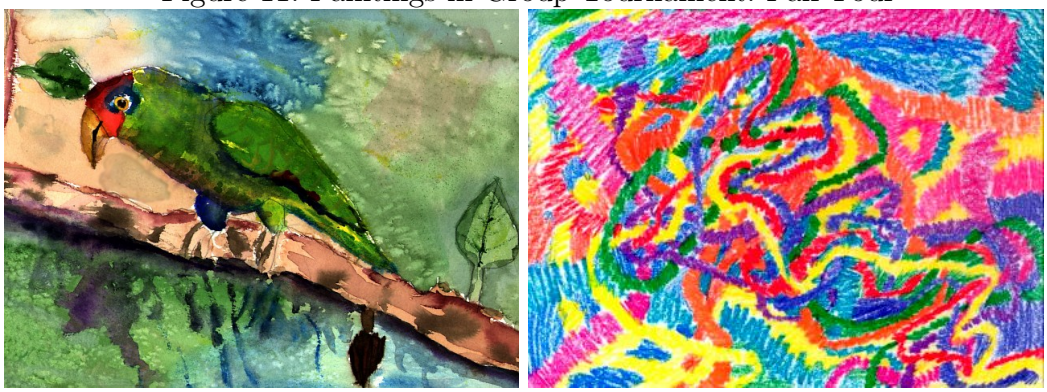


Figure 12: Paintings in Group Tournament: Pair Five

Answers:

figure 8: left - child, right - professional 'Sam Gilliam';

figure 9: left - child, right - professional 'Gerhard Richter';

figure 10: left - professional 'Gerhard Richter', right - professional 'Picasso';

figure 11: left - child, right - child;

figure 12: left - professional 'Gerhard Richter', right - professional 'Nick Mauss'.

C Online Appendix: Further figures and descriptive statistics

Figures 13 and 14 visualise the different treatments by summarising which roles belong to which group in the different possibilities.

Table 3 summarizes the descriptive statistics of the subjects in the experiment. Most dif-

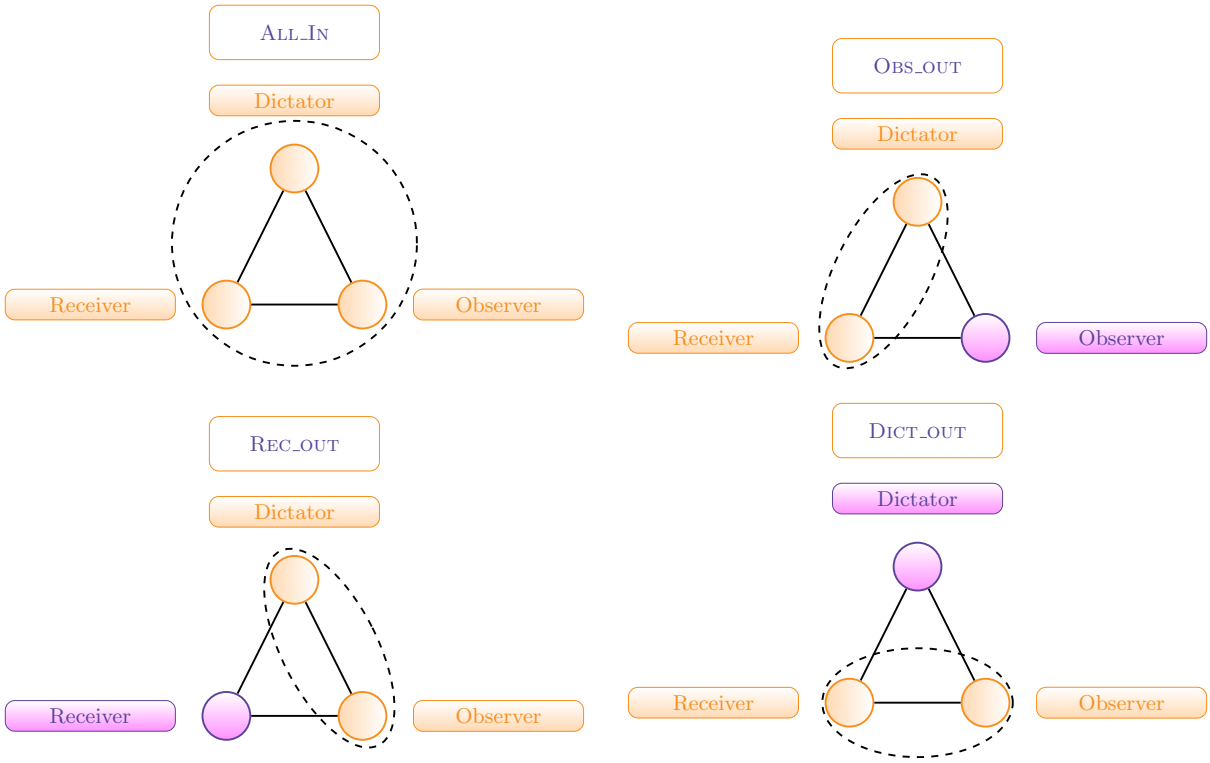


Figure 13: Treatment groups: 3 players with identity (dashed line with the same group membership)

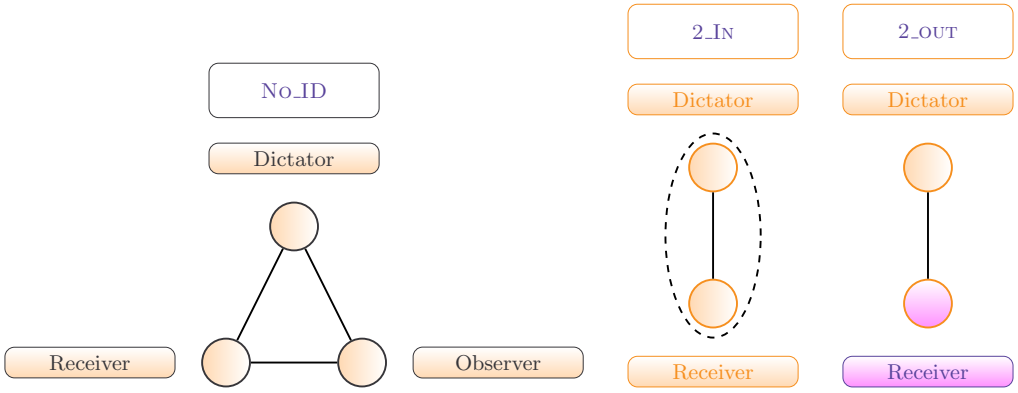


Figure 14: Control treatments: 3 players with no identity, and 2 players with identity (dashed line with the same group membership)

ferences between any pair of treatment groups regarding observable characteristics are found insignificant at 5% significance level except that subjects in the 2-player treatments seem to be younger than in the three-player treatments.[10] Furthermore, there is a significant difference

[10]Pairwise comparison between 2-player treatments to 3-player treatments results in a significant difference for almost all comparisons at 5%-level (MW), except for OBS_OUT vs. 2_IN, OBS_OUT vs. 2_OUT.

Table 3: Descriptive statistics

Treatment	ALL_IN	OBS_OUT	REC_OUT	DICT_OUT	NO_ID	2_IN	2_OUT
Age	22.83	21.41	22.21	21.82	24.71	20.46	20.67
	(3.53)	(2.46)	(2.67)	(5.49)	(7.78)	(2.00)	(2.43)
Female	0.44	0.44	0.56	0.47	0.63	0.46	0.71
	(0.50)	(0.50)	(0.50)	(0.51)	(0.50)	(0.51)	(0.46)
Caucasian	0.78	0.68	0.71	0.65	0.79	0.67	0.54
	(0.42)	(0.48)	(0.46)	(0.49)	(0.42)	(0.48)	(0.51)
Asian	0.17	0.27	0.18	0.27	0.17	0.21	0.46
	(0.38)	(0.45)	(0.39)	(0.45)	(0.38)	(0.42)	(0.51)
Econ major	0.67	0.71	0.59	0.59	0.50	0.67	0.71
	(0.48)	(0.46)	(0.50)	(0.50)	(0.51)	(0.48)	(0.46)
Obs.	36	34	34	34	24	24	24

Notes: Standard deviations are between parentheses.

in age for OBS_OUT vs. NO_ID, DICT_OUT vs. NO_ID; in being female for ALL_IN vs. 2_OUT, OBS_OUT vs. 2_OUT; in being Asian for ALL_IN vs. 2_OUT, REC_OUT vs. 2_OUT and NO_ID vs. 2_OUT. On average, our subjects are 22 years old, 52% of our subjects are females; more than two-thirds of subjects are caucasians, and the majority (63%) of our subjects has an economic educational background.