Somebody may scold you!

A dictator experiment

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VERY PRELIMINARY DRAFT

REMARKS WELCOME

Abstract – In this contribution, we investigate the effects of *ex post* verbal written feedback and observation from a third-party in a dictator game. We first test the impact of observation by a third-party on dictators' propositions. We then test whether an anticipated feedback from the observer consisting of a statement of degree of (dis)satisfaction selected from a closed-form questionnaire affects the generosity of the dictator as compared to situations with observation but no feedback and with no observation. Curiously, it appears that observation coupled with verbal ex post communication has a significant impact on dictators'

propositions, while no significant effect is found for observation alone. This suggests that observation by others matters only if it complemented by a sort of judgment.

1. Introduction

Research in economics and psychology has established that informal sanctions, in particular expressions of disapproval, can favor pro-social behaviors. For instance, Ellingsen and Johannesson (2007) provide a one-shot dictator experiment where they compare a feedback treatment, i.e. a treatment whereby an anonymous verbal written message is sent by the recipient to the proposer after the pass, with a no feedback treatment and show that anticipated verbal rewards induce altruistic behavior. Comparing the donation level in the feedback condition with ultimatum game proposals reported in a previous paper (Ellingsen and Johannesson 2005) for an almost identical subject pool, they suggest that the effect of anticipated emotional feedback is comparable to the effect of punishment: the donation level is about 35% of the pie in both experiments. Xiao and Houser (2007) find similar results although there are more restrictions in their experimental design on the amounts to pass (e.g. the divider cannot take more than 90%) and on the content of the feedback written message.

Xiao and Houser (2005) find complementary results in ultimatum games. They show that ex-post verbal written feedback messages significantly decrease the likelihood of rejecting unfair results. This suggests that verbal written communication is an expression of disapproval, which can be a non-costly substitute for monetary punishment.

Similarly, it has been demonstrated in laboratory experiments that observation by others may have a significant effect on behavior, whether it is due to a Hawthorne or scrutiny effect (see Levitt and List 2007) or to an audience effect (see Andreoni and Bernheim 2009), or to a lack of experimenter-subjects or between-subject anonymity between subjects (see the seminal work of Hoffman and al. 1994; Bohnet and Frey 1999a and 1999b; Frohlich et al. 2001; Burnham, 2003, Haley and Fessler 2005). Other experiments however find no significant experimenter anonymity effect (Bolton and Zwick 1995, Bolton et al. 1998).

Nevertheless, scholars are only beginning to understand the reasons observation or informal sanctions affect behaviors and economic outcome. In particular, there are conflicting interpretations as to whether the impact of informal sanctions on behavior is due to communication, reputational effects (reactions to disapproval and efforts to avoid disapproval in repeated games (Masclet et al. 2003), to decreased social distance or reciprocal motivations in one-shot dictator games (Bohnet and Frey 1999b), to the 'content' or the 'relational' dimension of communication[1] in dictator games with a verbal pre-play communication (Mohlin and Johannesson 2008).

In this contribution, we try to combine in an anonymous dictator game experiment the observation and the informal sanction effects in a unified framework that permits to disentangle those two effects and to clarify the underlying motivations behind them. To our knowledge, this is the first study to isolate the impact of observation combined with informal sanction by means of a written feedback from the impact of mere observation, both observation and sanction emanating from a third party by a third party.

2. Experimental design and procedures

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[1] The 'content' dimension suggests that the existence of some norm of fairness while the 'relationship' dimension of communication suggests that communication increases empathy or decrease the social distance.

In order to avoid both reputational effects due to repeated games and conditional reciprocity (i.e. reciprocal motivations based on future material payoffs), we conduct a one-shot anonymous dictator game experiment with and without *ex post* communication from a third-party called the observer. The dictator game is chosen over the more popular ultimatum game in order to avoid confounding altruism with risk aversion or false beliefs. Sanction by a third-party is chosen over sanction by the recipient in order to restrict sanction to non outcome-oriented punishment (see Fehr and Fischbacher 2004).

Ex-post communication takes the form of an anonymous closed-form verbal written message consisting of a list of 7 possible messages to be sent to the dictator by the third-party (called the observer) that are ranked from 1 to 7 according to his/her degree of (dis)approval of the dictator's donation. "Bastardo" (1), which means "bastard" in Italian, is very harsh compared to "Bravissimo" (7), meaning "this is very nice of yours", which is the kindest message. The item "nessuno commento", which means no comment, has the value 0 when the third-party chooses not to send any feedback. We obtained only 8 cases of such a situation. The screen seen by subjects is the following:

Screen 1: The feedback message stage (translation of the list of items is as follows : *Nessun commento*: no comment; *bastardo*: bastard; *taccagno* : stingy; *non è carino da parte tua*: that's not nice of yours; *va bene ma potrevi fare meglio*: OK but could do better; può andare: it's OK; *bravo*: nice of yours; *brassimimo*: very nice of yours)

We run three between treatments in order to distinguish between the observation effect and the informal sanction effect. The first treatment (C), the control treatment, is standard dictator game (DG). The second treatment (O) is a dictator game with an observer informed about the allocator's donation. The third treatment (F) allows the observer to send a written verbal feedback to the dictator. In the F treatment, the dictator is further asked to which extent and in which direction he would modify his/her donation if he would have the opportunity to play again. More precisely, the allocators are informed about the feedback message content of the observer of their group (for instance, in the screen below, "taccagno" which means "stingy") and then decide what is the amount they would retain if they were given the opportunity to replay.

MESSAGGIO DELL'OSSERVATORE

L' **OSSERVATORE** del tuo gruppo ha deciso di inviarti il seguente messaggio per manifestare la sua opinione sul trasferimento da te effettuato

Taccagno

Se potessi modificare la tua decisione, quanto tratteresti della somma a tua disposizione (questa scelta non influenzerá il tuo profitto finale)?

€ [8]

Screen 2: Dictator's intentions of donations after getting the feedback message. Translation of the screen is as follows: MESSAGE OF THE OBSERVER. The observer of your group decided to send you the following feedback message in order to give his/her opinion about how much you transferred. *Stingy*. If you were given the possibility to alter your decision, how much would you keep from the total amount at your disposal (this choice will not affect you final profit)?

In order to test for the existence of a socialization effect[2], we ran two variants with different subjects of each treatment. In other terms, we hypothesize that the order in which

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[2] The idea that grouping subjects may influence donations by dictators in a dictator game is introduced by Cason and Mui (1997). They compare a individual dictator game where the dictator decide to transfer an amount of y to

subjects are randomly matched in pairs (for the control treatment) and groups of three (for treatments O and F) and attributed a role matters. The intuition was that grouping subjects first could decrease the social distance and therefore affect the behavior of allocators. We consequently ran variants of each treatments where subjects were randomly matched in pairs or groups of three first and then attributed a role (proposer, recipient or possibly observer) and the other way around (subjects were first attributed a role and then matched into pairs or groups of three). Those experiments are called respectively C1, O1, and F1 for the first variant and C2, O2 and F2 for the second variant. (See instructions in appendix 1).

The experiment was conducted in October 2011 at the "Centro Sperimentale A Roma Est" (CESARE) located at one of the campus locations of the LUISS Guido Carli University in Rome. The subjects were recruited by e-mail using ORSEE (Online Recruitment System for Economic Experiments, devised by Ben Greiner at the University of New South Wales in 1994). They were randomly allocated between the six treatments and we carried out 18 sessions (6 sessions for the control treatments, 6 sessions for the 'Observation' treatments, and 6 sessions for the 'Observation and Feedback' treatments). A total of 528 subjects participated in the experiment yielding 198 paired or trios observations (66 pairs of observations for the control treatments, 66 trios of observations for the 'Observation' treatments and 66 trios of observations for the 'Observation and Feedback" treatments). In addition, we have 66 additional observations linked to the 'Observation and Feedback" treatments that correspond to the post-play intentions of donations of allocators after having received the feedback from the observer.

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the recipient with a team dictator game where two subjects dictate the donation of 2y to be transferred. Results show that there is group polarization in this context and data indicate that team choices tend to be dominated by the more other-regarding member. However, in our experiment, we found no such socialization effect. One of the explaining might be that the random procedure we use to form groups in the experiment is very fast and is not demanding in terms of attention from subjects.

Subjects in a pair or a group of three were anonymous with respect to each other, and the decision of a specific subject could not be observed by other subjects except by the observer of his or her specific group of three. The instructions (translated from Italian) of the treatments C1, O1 and F2 are given in Appendix 1 (remind that treatments indexed by 1 differ from those indexed by 2 only by the order in which subjects are matched into pairs or groups of three and attributed the role of proposer, recipient or observer). At the end of the experiment, the participants are asked to complete an anonymous questionnaire (professional status, discipline, age, gender). Finally, subjects are called one by one to the experimenter in order to be paid privately and then leave the lab.

The amount of the show-up was 3€ and the endowment of allocators 6€. The gain was therefore belonging to the interval [3, 9] since the observer is given a fix amount of 6€. The average time of the experiments was 15th minutes.

3. The results

Dictators pass an average 1.98 for all treatments taken together. In treatment C, this mean is 1.78 (SD = 1.38), in treatment O 1.78 (SD = 1.45) and in treatment F 2.37 (SD = 1.65). Intentions of allocations by dictator after getting the feedback message from the observer (F') amounts to 2.22 (SD = 1.89).
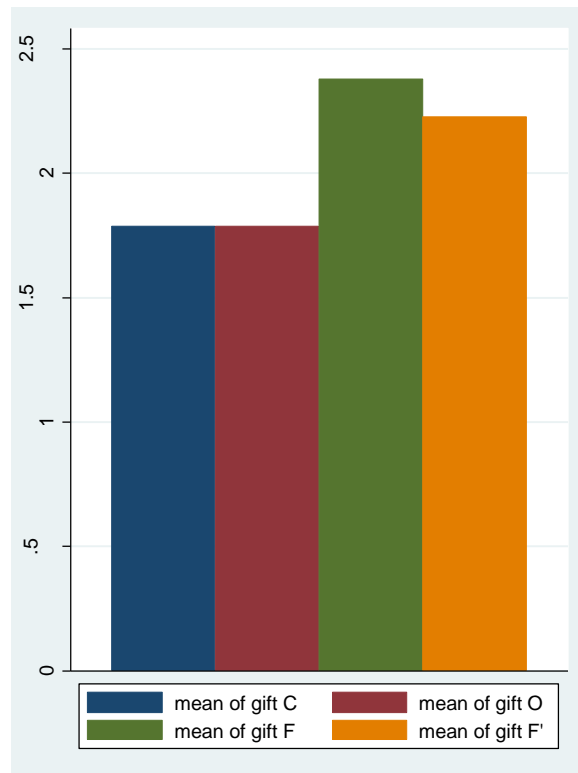
Figure 1: Means of donations in treatments C (gift C) , O (Gift O), F (gift F)and intentions of donations (gift F')

Table 1 exhibits the percentage of maximum (i.e., 6 euros), fifty-fifty (i.e., 3 euros) and minimum (i.e., 0 euro) donations in each treatment. In the control treatment (C), 21.21% of dictators do not pass anything, 27.27% of them transfer half of their endowment, and 1.52% give the maximum 6. In O, 21.21% of them give nothing, 22.73% choose the fifty-fifty transfer, and 1.52% passes the total amount of their endowment. Finally in F, 15.15% of dictators give nothing, 24.24% give half of their endowment, and 7.58% pass the whole endowment. Descriptive statistics are in appendix 2.

	Min (0)	Fifty-fifty (3)	Max (6)
C1	21.21	18.18	0
C2	21.21	24.24	6.06
O1	24.24	24.24	3.03

O2	18.18	21.21	0
F1	9.09	21.21	9.09
F2	18.18	27.27	6.06

Table 1: Percentage of minimum, fifty-fifty and maximum transfers

The Mann-Whitney test shows that there is no significant socialization effect. Remind that we define this effect in relation to the order in which subjects are matched into groups of two or three and attributed a role. The absence of a significant socialization effect therefore means that the order of the sequence of grouping and attributing roles does not modify substantially the behavior of allocators[3]. This test reveals however that, if there is a significant difference between the amounts given by the proposers in treatments F and O, this difference is not significant when we compare treatments C and O (see appendixes 2 and 3).

Figure 2 indicates the frequencies of donations from 0 to 6 for treatments O, C and F. Since there is no significant socialization (or order) effect, data are aggregated over treatments O1 and O2 (O treatment), C1 and C2 (C treatment) as well as F1 and F2 (F treatment) in all the remaining statistical treatments.
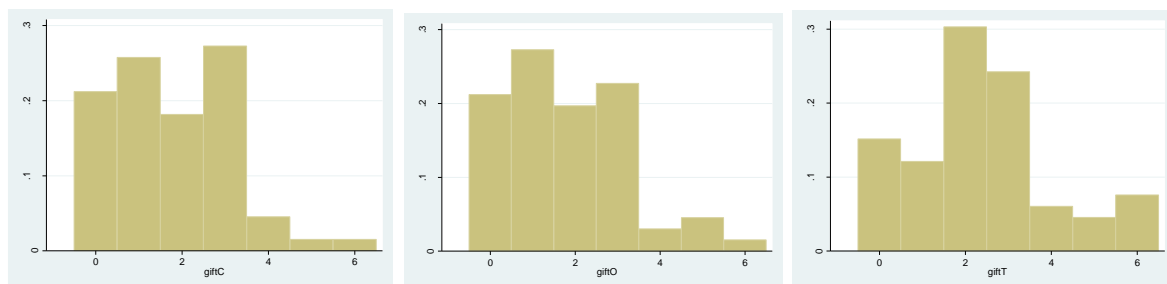

Figure 2. Frequencies of the donations from 0 to 6 in treatments C, O and F

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[3] One possible explanation of the absence of a socialization effect might be that the random procedure we use to form groups in the experiment is very fast and is not demanding in terms of attention from subjects.

Interestingly, as shown by Figures 2 as well as Figure 3 below, the frequencies of donations in treatment F have a different distribution to those in treatments O and C: the frequencies of donations under the fifty-fifty norm (namely, 3) are systematically lower in the F treatment than in the C and O treatments while frequencies of donations over the fifty-fifty norm are systematically higher in the F treatment than in the C and O treatments.
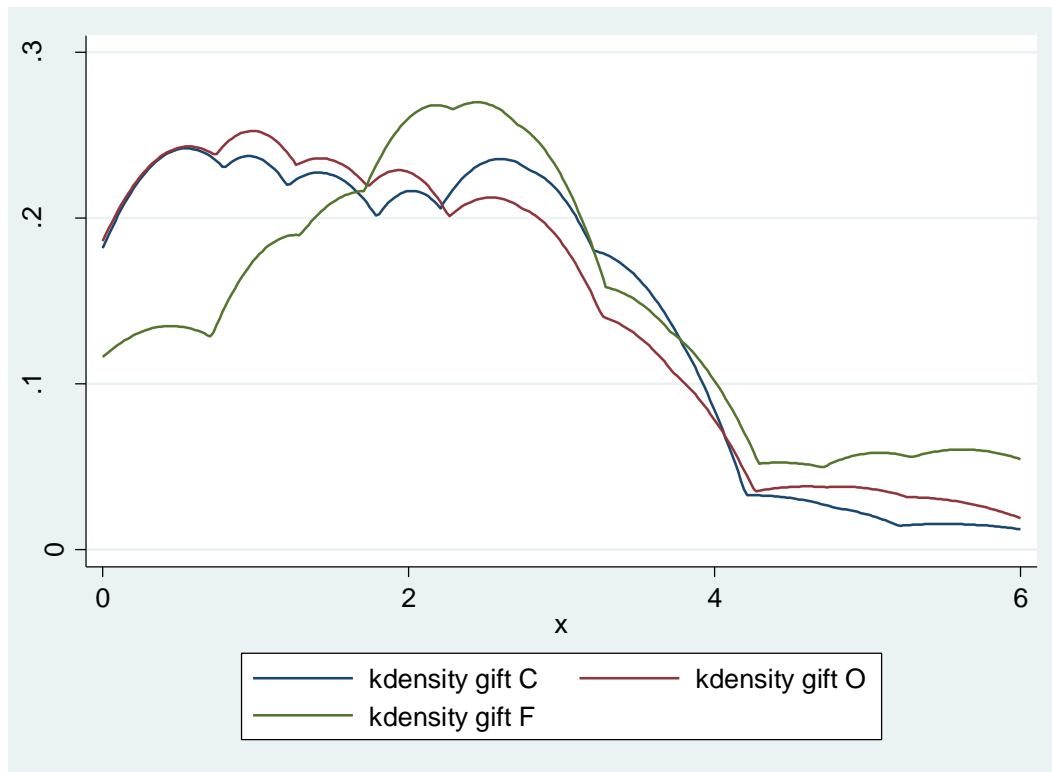
Figure 3: Kernel densities of donations in the control treatment (gift C), in the 'observation' treatment (gift O) and the 'Observation and Feedback' treatment (gift F)

As for the treatment with feedback (F), the mean of the amount that the proposer would have retained if he would have had the opportunity to replay is significantly higher (3.77) than the amount he/she retains during the game (3.22). Only 36.36 percent of the messages sent are soft ones (4 to 7) and there is a weak correlation between the money retained by the proposer and the kind of message sent by the observer (.19).

We create a proxy of the *intensity of evaluation* of observers (see appendix 4). This variable is defined as the difference between the degree of disapproval of the message sent by the observer (scaled from 1 to 7) and the effective amount of the donation (scaled from 0 to 6). We obtain a variable that can be considered as the *intensity of evaluation* of observers and which evolves from -5 (a seemingly excessive level of disapproval) to 7 (a seemingly excessive level of approval). The value of a 'sound' *intensity of evaluation* is then 1. The kernel density of the 'intensity of evaluation' is given in Figure 4.
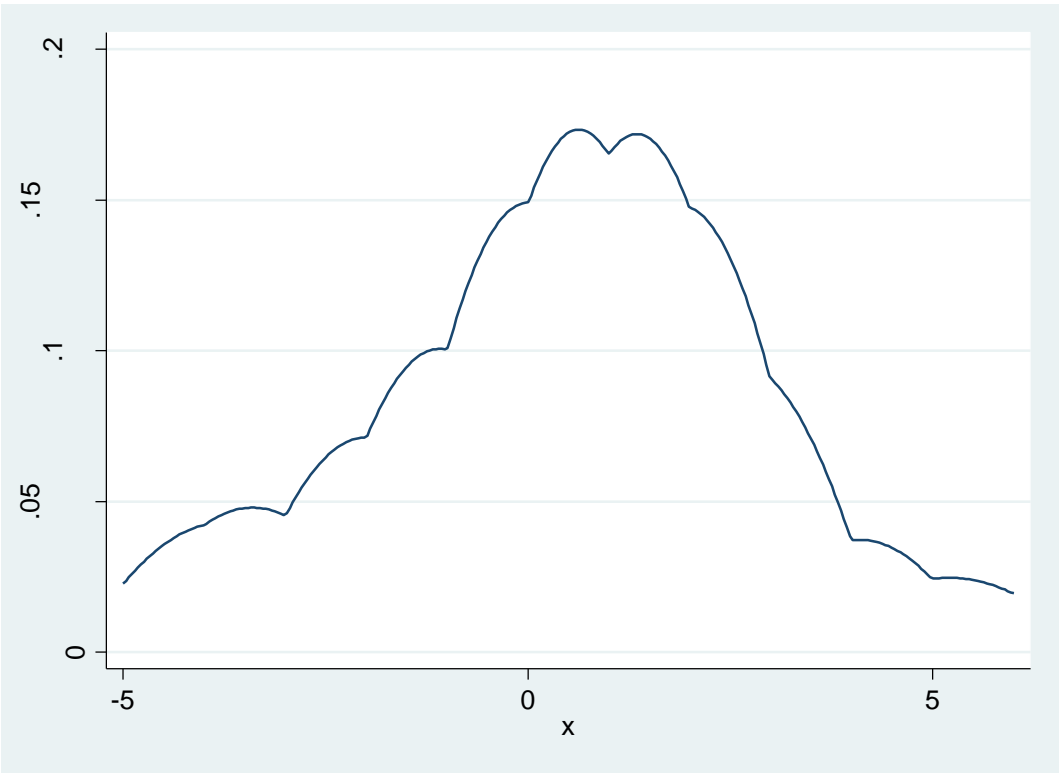
Figure 4: Kernel density of the *evaluation intensity* of observers

The Student test[4] shows that the value of the feedback is significantly belonging to the interval [0 to 1]. That means that the messages are close to the objective one (cf. appendix 5).

When we look at the correlation between the amount of money the proposer would have retained if he would have replayed (retained2) on the amount of money he retained

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[4] The Skewness-Kurtosis test shows that the distribution is normal (Prob > chi2 = .81).

(retained1) and the message (message), we obtain a significant coefficient (at the level of 1%) between retained2 and message (.39) as well as between retained1 and retained2 (.39), but no significant correlation between retained1 and message. Figure 4 shows the kernel densities of the amount the proposers would have given (gift F') if they would have replayed and the degree of disapproval of the message.
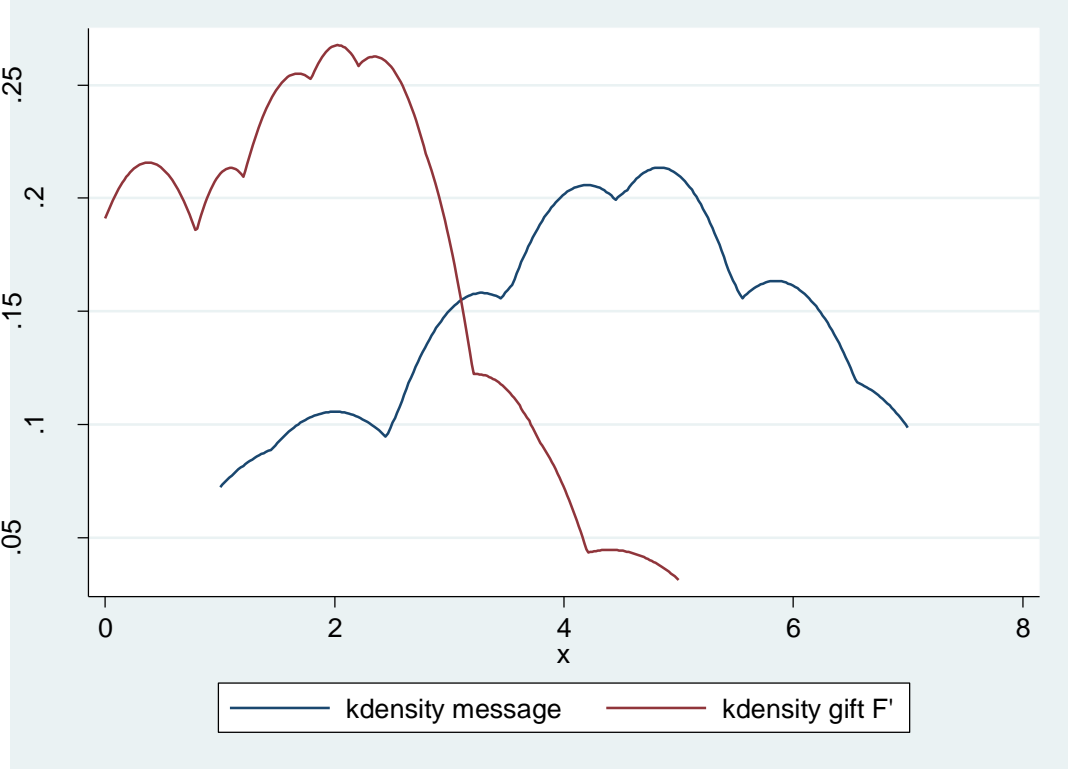
Figure 4: Kernel densities of intentions of donations (F') – on the vertical axis – and the degree of disapproval of the message – on the horizontal axis

We also run an ordinary least squares regression of the amount of money the proposer would have retained if he would have played another time on the amount of money he actually retained and the message and we obtain the following equation with significant parameters (see appendix 6):

$$\text{retained2} = .29.\text{retained1} + .29.\text{message} + 1.68$$

The chi2 test corroborates this result. The nil assumption, retained1 is independent from message cannot be refused (Pr=0.08) but retained2 is strongly dependent of message (Pr=0.000).

This result is very interesting and rather intuitive although it has to be taken with caution since it relates to cost-free intentions that may be suspected of hypocrisy. It shows that the amount of money the proposer would have retained if he would have replayed is positively linked with both 1) the amount of money he actually retained and 2) the message. The first correlation suggests that there is inter-temporal consistency of individual choices. The second correlation is more counter-intuitive since it implies that the stronger (1 to 3) the message the lower the amount of money the proposer would have retained if he would have replayed. In other terms, this suggests that the feedback has both an *ex ante* effect since allocators do take it into account in their donations choice) and an *ex post* effect since they intend to give more when getting a harsh message.

4. Discussion

Our experiment exhibits levels of donation that are significantly different from theoretical ones. This corroborates many already existing experimental findings on dictator games.

The absence of significance of the differences between the means of donations in treatment C and O may be due to the fact that we ran one-shot experiments. In previous experiments we found that in a within design of a dictator game[5] played five rounds (subjects are simultaneously randomly matched to form groups of three and given their roles every new

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[5] It was a sequence of three games: a standard dictator game, a dictator game with an observer, and finally a dictator game with an observer who is given the possibility to tax the dictator.

round) the presence of an observer significantly increases dictators' donations as compared with a standard dictator game (Festré and Garrouste, 2011).

 Another interpretation may be that at least some of the allocators have some internalized social norms, which induce them to transfer an amount significantly different from zero. This may explain why the presence of an observer does not have a significant impact on donations. Moreover, since subjects have no information concerning the very status of the observer, it is impossible for them to infer his/her opinion or his/her preferences in terms of fairness for instance. This uncertainty may reinforce this interpretation. From this standpoint, the introduction of the possibility – which is common knowledge – of a feedback permits to remove the uncertainty and makes the role of the observer explicit and therefore, effective. This suggests that in our experiment, observation by others matters only if it complemented by the likelihood of disapproval. This is in line with findings in cognitive psychology that perception can be more powerful than reality in so far as people use cues or heuristics to evaluate the likelihood that their actions are observable and possibly disapproved. The existence of the feedback is therefore a deciding factor in order for the proposers to know particulars about the third party. In other words, it is a means of engineering altruism (see Burnham 2003). The fact that they consequently adjust their behavior should come as no surprise.

The feedback effect is economically relevant since it indicates that individuals are sensitive to anticipated possible sanctions. This suggests that feedbacks are non costly substitutes to effective pecuniary sanctions.

The results obtained with the proxy variable for the *intensity of evaluation* of observers plead for an interpretation in terms of reciprocity. Feedbacks are essentially 'objective' ones and show that the observers reciprocate 'fairly' to proposers' donations.

The fact that the strength of the message has an impact on the amount the dictator would have retained if he would have had the opportunity to replay is interesting because of the positive relationships between the two. In other words the softer the message is (4 to 7) the higher the amount the dictator would have retained if he would have replayed. Conversely, the stronger the message (1 to 3), the less this amount. This result supports an interpretation of the feedback message as a disciplinary device.

Acknowledgments

Appendix 1

Instructions are translated from Italian, the language in which they have been actually delivered.

Instructions of treatment C1 [i.e., the control treatment where groups are formed first and then roles are attributed using random procedures]

Welcome. You have accepted to participate to an experiment at the end of which you will get a show-up fee of 3 euro. You can get more depending on your performance during the experiment. The total amount of your gains will be given to you at the end of the experiment. At the end of the experiment, before being paid you will be asked to complete an anonymous questionnaire (level of studies, gender, etc.).

1.1. Determination of the group of two

During the experiment you will be matched randomly in groups of two persons. You will not know the identity of the other member of the group you belong to neither during nor after the experiment.

1.2. Determination of the roles.

You will be randomly given a role of proposer (A) or receiver (B). Each proposer has an amount of 6 euro and has the possibility to transfer part of this amount to the receiver he/she is matched with. (As an example if A decides to transfer 2 euro to B, he or she types the amount in euro he or she has decided to keep, namely, 4 euro).

Instructions of treatment O1 [i.e., the treatment with observation alone where groups are formed first and then roles are attributed using random procedures]

Welcome. You have accepted to participate to an experiment at the end of which you will get a show-up fee of 3 euro. You can get more depending on your performance during the experiment. The total amount of your gains will be given to you at the end of the experiment. At the end of the experiment, before being paid you will be asked to complete an anonymous questionnaire (level of studies, gender, etc.).

1.1. Determination of the groups of three

During the experiment you will be matched randomly in groups of three persons. You will not know the identity of the members of the group you belong to neither during nor after the experiment.

1.2. Determination of the roles.

You will be randomly given a role of proposer (A), receiver (B) or observer (C). Each proposer has an amount of 6 euro and has the possibility to transfer part of this amount to the receiver he/she is matched with. C receives a fixed amount of 3 euro in addition to the show-up fee. (As an example if A decides to transfer 2 euro to B, he/she types the amount in euro he or she has decided to keep, namely, 4 euro). This amount is immediately notified to the observer of his or her group.

Instructions of treatment F2 [i.e., the control treatment where roles are attributed first and then groups formed using random procedures]

Welcome. You have accepted to participate to an experiment at the end of which you will get a show-up fee of 3 euro. You can get more depending on your performance during the experiment. The total amount of your gains will be given to you at the end of the experiment.

At the end of the experiment, before being paid you will be asked to complete an anonymous questionnaire (level of studies, gender, etc.).

1.1. Determination of the roles

During this experiment, you will be randomly given a role of proposer (A), receiver (B) or observer (C). You will not know the role of the members of group you belong to neither during nor after the experiment. Each proposer has an amount of 6 euro and has the possibility to transfer part of this amount to the receiver he/she is matched with. C knows what amount is transferred by A to B and has the possibility to send a written message to A to tell him his/her opinion concerning the amount transferred. C receives a fix amount of 3 euro in addition to the show-up fee.

1.2. Determination of the groups of three

You will now be matched randomly in a group of three persons consisting in one proposer (A), one receiver (B) and one observer (C).

Each proposer (A) decides how much he is willing to transfer to the receiver (B) of his or her group. (As an example if A decides to transfer 2 euro to B, he/she types the amount in euro he/she has decided to keep, namely, 4 euro). This amount is immediately notified to the observer of his or her group.

A is then asked to decide the amount he/she would like to transfer to B if he/she were given the opportunity to replay.

Appendix 2 – Descriptive statistics

```
        Variable │        Obs        Mean    Std. Dev.         Min         Max
─────────────────┼──────────────────────────────────────────────────────────
           giftC │         66    1.787879    1.386919           0           6
           gift0 │         66    1.787879     1.45195           0           6
           giftF │         66    2.378788    1.652645           0           6
       giftFprime │         66    2.227273    1.895707           0           6
```

```
                │    giftC      gift0      giftF  giftFp~e
────────────────┼───────────────────────────────────────────
          giftC │   1.0000
          gift0 │  -0.1220     1.0000
          giftF │   0.0557    -0.1391     1.0000
      giftFprime │   0.0596    -0.0716     0.3257     1.0000
```

Appendix 3

Tests of significance

```
Two-sample Wilcoxon rank-sum (Mann-whitney) test

     giftCgift0 │       obs     rank sum    expected
────────────────┼─────────────────────────────────────
              1 │        66         4419        4389
              2 │        66         4359        4389
────────────────┼─────────────────────────────────────
       combined │       132         8778        8778

unadjusted variance      48279.00
adjustment for ties      -2444.65
                         ──────────
adjusted variance        45834.35

Ho: gifts(giftCg~0==1) = gifts(giftCg~0==2)
           z =     0.140
    Prob > |z| =    0.8886
```

Significance of the difference between gift C and gift O

```
Two-sample Wilcoxon rank-sum (Mann-whitney) test

     gift0giftF │       obs     rank sum    expected
────────────────┼─────────────────────────────────────
              1 │        66         3941        4389
              2 │        66         4837        4389
────────────────┼─────────────────────────────────────
       combined │       132         8778        8778

unadjusted variance      48279.00
adjustment for ties      -2049.78
                         ──────────
adjusted variance        46229.22

Ho: gifts(gift0g~F==1) = gifts(gift0g~F==2)
           z =    -2.084
    Prob > |z| =    0.0372
```

Significance of the difference between gift O and gift F

Appendix 4

Generosity

0	1	2	3	4	5	6

Kindness

1	2	3	4	5	6	7
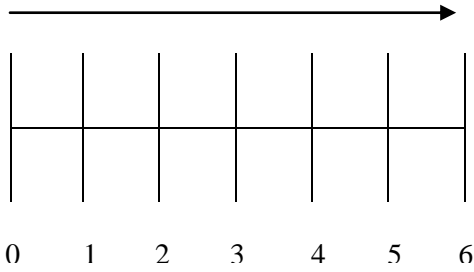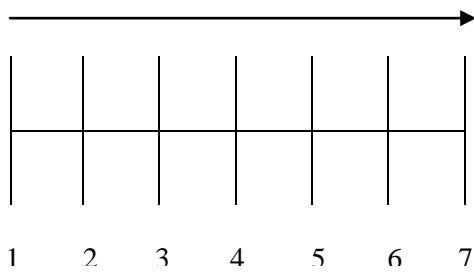
Feedback fairness = Kindness - Generosity

too unfair feedback   too fair feedback

-5   -4   -3   -2   -1   0   1   2   3   4   5   6   7

'objective' feedback
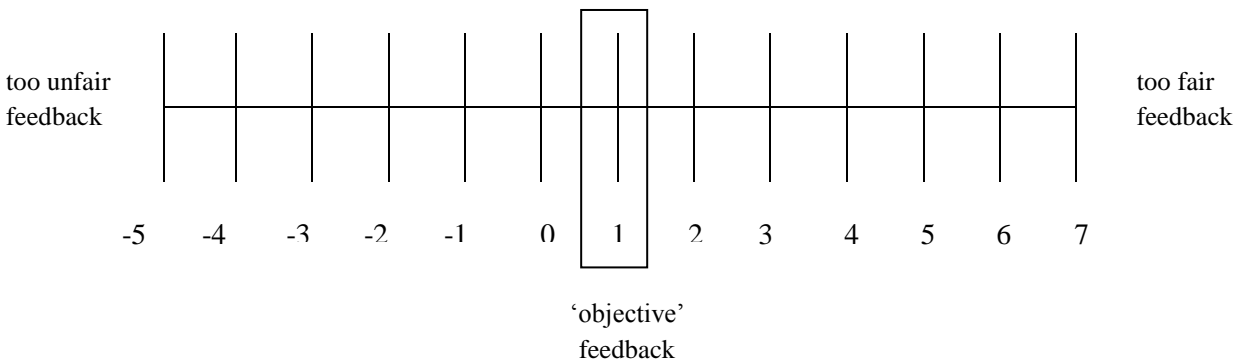
Appendix 5

```
. ttest Fairness==-0.5

One-sample t test
─────────────────────────────────────────────────────────────────────────────
Variable │     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
─────────┼───────────────────────────────────────────────────────────────────
Fairness │      58    .5344828     .327427    2.493609    -.1211784    1.190144
─────────────────────────────────────────────────────────────────────────────
    mean = mean(Fairness)                                      t =     3.1594
Ho: mean = -0.5                              degrees of freedom =         57

   Ha: mean < -0.5                 Ha: mean != -0.5                Ha: mean > -0.5
 Pr(T < t) = 0.9987          Pr(|T| > |t|) = 0.0025          Pr(T > t) = 0.0013

. ttest Fairness==0.5

One-sample t test
─────────────────────────────────────────────────────────────────────────────
Variable │     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
─────────┼───────────────────────────────────────────────────────────────────
Fairness │      58    .5344828     .327427    2.493609    -.1211784    1.190144
─────────────────────────────────────────────────────────────────────────────
    mean = mean(Fairness)                                      t =     0.1053
Ho: mean = 0.5                               degrees of freedom =         57

   Ha: mean < 0.5                  Ha: mean != 0.5                 Ha: mean > 0.5
 Pr(T < t) = 0.5418          Pr(|T| > |t|) = 0.9165          Pr(T > t) = 0.4582

. ttest Fairness==1

One-sample t test
─────────────────────────────────────────────────────────────────────────────
Variable │     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
─────────┼───────────────────────────────────────────────────────────────────
Fairness │      58    .5344828     .327427    2.493609    -.1211784    1.190144
─────────────────────────────────────────────────────────────────────────────
    mean = mean(Fairness)                                      t =    -1.4217
Ho: mean = 1                                 degrees of freedom =         57

   Ha: mean < 1                    Ha: mean != 1                   Ha: mean > 1
 Pr(T < t) = 0.0803          Pr(|T| > |t|) = 0.1605          Pr(T > t) = 0.9197

. ttest Fairness==1.5

One-sample t test
─────────────────────────────────────────────────────────────────────────────
Variable │     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
─────────┼───────────────────────────────────────────────────────────────────
Fairness │      58    .5344828     .327427    2.493609    -.1211784    1.190144
─────────────────────────────────────────────────────────────────────────────
    mean = mean(Fairness)                                      t =    -2.9488
Ho: mean = 1.5                               degrees of freedom =         57

   Ha: mean < 1.5                  Ha: mean != 1.5                 Ha: mean > 1.5
 Pr(T < t) = 0.0023          Pr(|T| > |t|) = 0.0046          Pr(T > t) = 0.9977
```

Significance of the fact that the 'objective' feedback fairness belongs the interval [0,1]

Appendix 6

| | model 1 |
	b/se
MR1	0.300**
	(0.10)
Message	0.299**
	(0.10)
Constant	1.681***
	(0.48)

* p<0.05, ** p<0.01, *** p<0.001

OLS regression (retained2 on retained1 and message)

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