EconomEtica

Centro interuniversitario per l'etica economica
e la responsabilità sociale di impresa
promosso dalla Fondazione Italiana Accenture

N.51 March 2014

Giacomo Degli Antoni
Gianluca Grimalda

Do we need to worry if people bowl alone? Results from a field experiment with voluntary association members

Working papers

Do we need to worry if people bowl alone?
Results from a field experiment with voluntary association members

By GIACOMO DEGLI ANTONI AND GIANLUCA GRIMALDA*

Trust in strangers is key for economic development. Social capital theory posits that participation in associations is essential to propagate trust in society, because membership instils trust both towards other members and generalised others. We provide an experimental test for this thesis. We measure members' trust and trustworthiness when interacting with fellow members or with people from the general population, who are not association members. We find that members trust and reward trust more than non-members, and do not discriminate between members and the general population. However, we find no correlation between the intensity of associational participation and increased pro-sociality.

(JEL C93; D71; D69; D03)

Keywords: trust; voluntary associations; ingroup favouritism; field experiment.

---

* Degli Antoni: University of Parma, Department of Law, Via Università 12, 43121 Parma, Italy; Econometica, Inter-University Center for Economic Ethics and Corporate Social Responsibility, Via Bicocca degli Arcimboldi 8, 20126, Milano, Italy (e-mail: giacomo.degliantoni@unipr.it); Grimalda: University Jaume I of Castelló de la Plana, Av. de Vicent Sos Baynat, s/n 12071, Castelló de la Plana, Spain; Kiel Institute for the World Economy, Kiellinie 66, D-24105 Kiel, Germany; University of Duisburg Essen, Centre for Global Cooperation Research, Schifferstr. 196, 47059 Duisburg, Germany (e-mail: grimalda@uji.es). This paper stems from a research project on "Trust and Trustworthiness in Association Members and in the Society". Two papers were derived from the project. The present paper focuses on participants' experimental decisions, while another paper (Degli Antoni and Grimalda 2013) focuses on participants' beliefs. We would like to thank: Associazione Giocamico, Avis, A.vo.pro.ri.t, CGIL Parma, Comunità di Sant'Egidio, Corale Giuseppe Verdi, Coro Lirico Renata Tebaldi, Coro "Voci di Parma", Forum Solidarietà, Terra di Danza and UIL Parma. We also thank Mariagrazia Ranzini, the staff of the Department of Economics library at the University of Parma and for their assistance and Demoskopea s.r.l. for recruitment of participants in the research. The paper benefited from comments by participants in the 53rd Annual Conference of the Italian Economic Association (Matera, October 19-20, 2012), the 8th International Meeting on Experimental & Behavioural Economics (Castellon, 8-10 March 2012), the Conference on "Socially Responsible Behaviour, Social Capital and Firm Performance" (Milan, 21-22 October 2011) and seminars in Bologna and Parma. We would like to thank Giuseppe Vittucci Marzetti for precious comments and suggestions. Remaining errors are solely the authors' responsibility. The project was funded by Bancaixa (grants P1-1A2010-17 and P1-1B2010-17), the Spanish Ministry of Science and Innovation (grant ECO2011-23634), Junta de Andalucía (P07-SEJ-03155), Generalitat Valenciana (GV/2012/045) and by the Italian Ministry of University and Research (PRIN 20085BHY5T).

I. Introduction

In his exhaustive analysis of US forms of governance in the 19th century, Alexis de Tocqueville famously placed great importance onto US citizens' propensity to form civil and political organisations for the stability and effectiveness of democratic institutions. He noticed the pervasiveness of associational life in the US[1], its dissemination across a wide range of economic and social spheres[2], and linked it to the democratic form of governance[3]. Tocqueville claimed that civil associations teach their members mutual understanding and reciprocal sympathy[4], and effectively transform widespread individual needs into social goals (Tocqueville 1845: 190). The idea that associations are key agents in fostering civic attitudes in their members has become common among the founders of contemporary political science (Lipset 1963; Truman 1971; Liphart 1977).

More recently, the role of associations has been further revitalised by exponents of "social capital theory". Social capital is generally referred to as all "features of social life – networks, norms, and trust – that enable participants to act together more effectively to pursue shared objectives" (Putnam 1995: 67)[5]. Robert Putnam has widely popularised the idea that voluntary associations *"instill in their members habits of cooperation,*

[1] In the words of Tocqueville (1845: 513): "Americans of all ages, all stations in life, and all types of disposition are forever forming associations".

[2] "There are not only commercial and industrial associations in which all take part, but others of a thousand types - religious, moral, serious, futile, very general and very limited, immensely large and very minute." (Tocqueville 1845: 514).

[3] "Thus the most democratic country in the world now is that in which men have in our time carried to the highest perfection the art of pursuing in common the objects of common desires and have applied this new technique to the greatest number of purposes". (Tocqueville 1845: 514)

[4] In associations, "feelings and ideas are renewed, the heart enlarged, and the understanding developed only by the reciprocal action of men one upon another" (Tocqueville 1845: 515).

[5] Social capital is understood as a multidimensional concept (Uphoff 1999; Paldam 2000). A structural and a cognitive dimensions may be identified (Uphoff, 1999). Structural social capital refers to individuals' behaviours and mainly takes the form of networks and associations (Coleman 1990). Cognitive social capital stems from subjects' perceptions resulting in norms, values and beliefs that contribute to co-operation (Knack and Keefer 1997; Guiso, Sapienza, and Zingales 2004).

solidarity and public-spiritedness" (Putnam, Leonardi, and Nanetti 1993: 88). In his popular book *Bowling Alone*, Putnam goes as far as linking the decreasing rate of involvement in associations with the decrease in inter-personal trust observed in the US since the 1960s.

It has been theorised that inter-personal trust in strangers is at the basis of improved economic performance and institutional efficiency (Arrow 1974; Putnam, Leonardi, and Nanetti 1993; Zak and Knack 2001). The relevance of trust for economic development has received extensive empirical support (Knack and Keefer 1997, Sampson, Raudenbush, and Earls 1997; La Porta et al. 1999; Zak and Knack 2001; Guiso, Sapienza, and Zingales 2006). Therefore, a decrease in participation in associations may drastically decrease inter-personal trust, and have detrimental economic as well as political consequences (Putnam 2000). We refer to this conjecture as the "association membership breeds trust" (AMBT) hypothesis. In economics parlance, the AMBT hypothesis involves a transformation of individual preferences, or beliefs, which spurs pro-social habits (Fehr and Fischbacher 2002). Simply put, association members develop a specific "taste for co-operation".

That interaction in associations improves co-operation *within* the association itself is not surprising, as it can be accounted for by both *direct* and *indirect reciprocity* (Fehr and Gächter 2000; Seinen and Schram 2006; Engelmann and Fischbacher 2009). However, the followers of the Tocquevillian tradition's claim is that participation in associations will also increase pro-social attitudes *outside* the association, that is, in interactions with generalised others in the society at large. In part this is made possible by the very fact that associations increase the density and the overlap of social networks, and this triggers mechanisms based on indirect reciprocity, reputation, monitoring and sanctioning (Putnam et al. 1993; Putnam 2000; Paxton 2007). Nevertheless, in large part, this is also due to the conjecture that the AMBT hypothesis will work towards increasing trust in, and co-operation with, absolute strangers.

This is the main idea that we want to test in this paper. We use experimental Trust Games (TGs) (Berg, Dickhaut, and McCabe 1995), first, to analyse whether members are as inclined to co-operate with people from the general population as they are with members. Secondly, we measure the economic gains that association members achieve in comparison with non-members when involved in anonymous interactions. Thirdly, we test for whether increased involvement in associations is conducive to greater inter-personal trust. Since co-operation among strangers can be sustained by reciprocity (Fischbacher, Gächter, and Fehr 2001), the presence of a kernel of people highly disposed to trust and being trustworthy in the society at large can have large "multiplier" effects that go far beyond the interactions in which such people are directly involved. In other words, association members are, on the basis of the social capital theory, key players in propagating trust in the society. We are the first to provide an experimental test of this idea.

The AMBT hypothesis has been subject to theoretical criticism. Uslaner (2002) claims that generalised trust is a moral disposition that is acquired in the early years of socialization, prior to any possible involvement with organisations. Trusters are naturally optimistic people, confident in the goodwill of strangers. In his survey analysis, he finds that association membership has no role in harbouring generalized trust. However, alternative survey evidence shows that association membership is indeed associated with higher generalised trust and civic-minded attitudes (Brehm and Rahn 1997; Stolle and Rochon 1998; Putnam 2000; Wollebaek and Selle 2002).

Experiments have been used recently to test for whether groups can indeed bring about efficiency gains. Experiments permit the study of inter-group relations in controlled situations of interaction, where groups are either induced through laboratory techniques, or rely on real-life demarcations, such as those based on religious, ethnic, or national boundaries. In so-called minimal groups laboratory experiments (Tajfel *et al*., 1971), it has been found that people show preferential attitudes and behaviours towards other

individuals who have been assigned to the same group (ingroup) in comparison with people being assigned to another group (outgroup). Moreover, co-operation rates are higher within ingroups than between members of an ingroup and an outgroup (Mullen Brown, and Smith 1992; Brewer, 1999; Eckel and Grossman 2005; Charness, Rigotti, and Rustichini 2007). This phenomenon has been termed *ingroup favouritism*. Ingroup favouritism also emerges in natural groups[6] and in short-lived artificially induced groups (army platoons) (Goette, Huffman, and Meier 2006; 2012), but is far from being a universal phenomenon[7]. This suggests that, while laboratory experiments permit isolating the effect of mere group categorisation, in real life inter-group dynamics are affected by group-specific social norms, or discrimination and stereotypes against specific groups (Hargreaves-Heap and Zizzo 2009).

In order to estimate whether groups as such are indeed conducive to greater economic efficiency, one needs nonetheless a control condition where group saliency is absent. This provides what we call the "baseline" co-operation rate. "Ingroup love" ("outgroup hate") is said to occur when co-operation rates with the outgroup are no less (significantly lower) than baseline co-operation rates, while co-operation rates with the ingroup are higher (no greater) (Brewer 1999). Ingroup love does bring about efficiency gains, while outgroup hate does not. All possible intermediate situations where baseline co-operation lies between ingroup co-operation and outgroup co-operation are possible. Whether groups bring about efficiency gains depends on the relative magnitudes of ingroup co-operation and outgroup co-operation, and other factors – such as the frequency of inter-group encounters, group sizes, *etc*.

---

[6] Ingroup favouritism emerges when groups differ by ethnicity (Bernhard, Fischbacher, and Fehr 2006), nationality (Finocchiaro and Castro 2008), social cleavages (Hoff, Kshetramade, and Fehr 2011), and community of residence (Falk and Zehnder 2013).

[7] Fershtam and Gneezy (2001), Willinger *et al*. (2003), Whitt and Wilson (2007) find either no or little ingroup favouritism in ethnic or national groups. Tanaka and Camerer (2010) even find outgroup favouritism. Habyarimana *et al*. (2007) find that social norms, rather than an intrinsic "taste", is at the basis of ingroup favouritism.

Hargreaves-Heap and Zizzo (2009) have shown that outgroup hate is prevalent in repeated trust interactions conducted with MGs. They thus conclude that the "pure" value of minimal groups is overall negative, and directly challenge social capital theory assumptions that groups are beneficial for the society. Chen and Li (2009) reach a similar result of a non-positive effect of group creation. Such a negative result stands in contrast with studies in social psychology, where consensus seems to have been reached that ingroup love dominates outgroup hate (Brewer 1999; Yamagishi and Kiyonari 2000; Yamagishi 2007).

Among natural groups, Fershtman, Gneezy, and Verboven (2005) also find outgroup hate between Flemish and Walloon university students, but find ingroup love among ultra-orthodox Jews in relation to people from the general population. Ruffle and Sosis (2006) find ingroup love among Israeli kibbutz members in relation to the general population. Voluntary associations differ from minimal or natural groups because the social ties created in such groups can reduce social distance. It has been argued and demonstrated experimentally that reduced social distance stimulates pro-sociality towards fellow group members (van Winden, Stallen, and Ridderinkhof 2008; Leider *et al*., 2009; Goeree *et al*., 2012; Goette, Huffman, and Meier 2006; 2012). In spite of the widespread interest generated in understanding and quantifying the "value of groups", it is surprising that there is no experimental investigation of the economic efficiency of real-life groups where people join voluntarily. What matters for our main research question is the disposition of real-life association members to co-operate with people from the general population, and the specific characteristics of the ingroup bias for members. If the AMBT hypothesis is true, then we should observe members' higher co-operation rates compared with non-members, both when they interact with people from the general population and with other fellow members. But if the ingroup bias takes for members the same forms observed in the real-life groups examined

above, then the benefits of co-operation may remain confined to the group and not spread to the rest of the society.

This paper is the first in the literature to study trust and trustworthiness of association members in ingroup and outgroup situations, and to contrast them with those of a demographically comparable group of people who have never joined associations. In studying voluntary group members we are clearly exposed to a self-selection bias of joiners with respect to non-joiners, which prevents us from drawing causal conclusions on the effect of membership. However, the self-selection bias cannot affect the nature of members' behaviour with fellow members and generalised others if, as we did in our study, assignment to the ingroup and outgroup condition is randomised. Association members in our sample belong to several types of associations and span various age groups and socio-economic status. The length of association membership ranges from four months to fifty years.

Our main findings are: (a) Members are significantly more trusting and trustworthy than non-members when interacting with people from the general population. (b) Members generally trust and reward fellow members in the same way as they behave with others. Ingroup favouritism is limited to two associations out of ten, while one association experiences significant outgroup favouritism. For all other seven associations no significant ingroup bias emerges. (c) No evidence emerges that growing individual involvement with associational life, measured by membership length, hours spent volunteering, and number of associations joined, affects trust and trustworthiness. This suggests that association members may indeed be key players for the dissemination of inter-personal trust in strangers in the society, although this may not be due to a specific formative effect of associations. We discuss the idea that associations may have a role in *maintaining*, rather than *creating*, pro-social attitudes.

The paper is structured as follows. Section II illustrates the experiment protocol. Section III reviews the results, which are discussed in Section IV. Section V concludes.

II. Experimental design

374 subjects took part in the experiment. 263 of them were association members ("members" henceforth) at the time the research was conducted, while 111 were not members ("non-members"). Among non-members, 77 had never been members of an association ("never-members"), and 34 had been association members in the past but were not members at the time the research was carried out ("dropouts"). In addition to being formally registered with an association, we required members to attend association meetings for at least one hour each month. We required a minimum degree of involvement because social capital scholars argue that trust is mainly created through active "face-to-face" participation in groups (Putnam 2000; Wollebaek and Selle 2002). The recruitment of dropouts follows Karlan's (2001) suggestion to recruit "unsuccessful" as well as "successful" cases when assessing the consequences of a given "treatment".

Our objectives in the sampling of associations were, on the one hand, that the associations spanned a broad range of the spectrum in terms of their general goals and type of good being produced, and, on the other, to cluster recruitment into a limited number of association types in order to have sufficient power when conducting statistical and econometric analyses. We opted for sampling trade unions (TU), cultural associations (CA) and social welfare and health services associations (SWA). According to the classification proposed by Knack and Keefer (1997), TU and CA stand at the opposite extremes of a spectrum ranking associations on the basis of their rent-seeking orientation, while SWA lie in an intermediate category. TU are typical "Olsonian" associations, as they act as "distributional coalitions" (Knack and Keefer 1997: 1273). They tend to pursue private interests, lobby for

preferential treatment and set up activities conducive to rent-seeking behaviour (Olson 1965). Such rent-extracting associations may fail to create a social fabric of trust and would be divisive in nature. CA are instead typical "Putnamesque" associations, in that the rent-seeking orientation is minimal, and are therefore most conducive to the spread of social capital in the society. Our choice in the intermediate category fell on SWA, because of the markedly public-oriented character of their activities. We conjectured that this category would be particularly relevant to test the thesis that people transfer co-operative habits from within to outside of the association.

Overall, we sampled ten associations of which four were CA - three choirs and one ethnic and traditional dance association; four were SWA - the Italian association for blood donation, an association for medical research on cancer, an association assisting hospitalised children and an association dedicated to charity and evangelisation; and two were TU (See Supplementary Online Material (SOM): Section III for a description of the associations, and Section IV for a more extended discussion of the sampling strategy).

Recruitment was conducted by experimenters and Demoskopea, one of the most well-known opinion polls and market research agencies in Italy. Our general strategy was to have members recruited by the experimenters, and non-members recruited by Demoskopea from the general population. Contact with potential subjects was carried out in person by experimenters through announcements at association meetings, or over the phone by Demoskopea staff. We requested that all contacts with potential subjects were made following a recruitment script that was as much as possible identical, regardless of the medium of contact. Hence, potential subjects were given the same information prior to coming to the research sessions. The recruitment scripts are available in the SOM: Section IV.

252 association members were recruited by the experimenters from the ten associations mentioned above. 11 members were inadvertently recruited by

Demoskopea, and have been classified as belonging to "other associations"[8]. 107 non-members were recruited by Demoskopea, while four were recruited by the experimenters to make up for no-shows.

At the end of the recruitment announcement or interview, subjects willing to participate in the research were required to provide information on their gender, age, education and profession. Recruitment of non-members occurred after that of members. In this way we were able to recruit a sample of non-members with comparable demographic characteristics to those of members. Table S1 in the SOM reports demographic characteristics for the three groups of members, never-members and dropouts. The analysis reported in the SOM, Section I, confirms that there are no statistically significant differences between the three groups with respect to gender, age and education. Differences in experimental behaviour between groups cannot thus be ascribed to such demographic characteristics. Members were randomly allocated to either the ingroup or the outgroup treatment.

Experiments were conducted between May and October 2011 in Parma, Italy, at the library of the Economics Department. Given the expected low computer literacy of subjects, all experiments were conducted with "pen and paper". Two groups of subjects were separately conducted to two different rooms of the library. Experimental sessions were run in parallel by the two experimenters. Subjects were instructed that they would participate in two decisions, and that payments would be given by the payoff of only one of the two. Both decisions had a 50% probability of being selected. The rules of the TG were then illustrated to subjects. The instructions are reported in the SOM, Section V. Each participant was paired with another participant present in the

[8] During the recruitment interview with Demoskopea, these people answered negatively to the screening question on whether a person is part of an association. However, they reported in the post-experiment questionnaire that they were in fact active association members at the time of the research. We suppose that this may be due to subjects' absent-mindedness when answering the recruitment interview, so we have kept these 11 subjects in the sample as members (See SOM: Section IV).

other room, whose identity was kept secret. In the first decision, all subjects acted as Senders, while in the second decision all subjects acted as Receivers. When subjects acted as Senders they were unaware that they would be acting as Receivers in the second decision. To avoid possible reciprocity effects, pairs were rematched from the first to the second decisions. No feedback was given between the two decisions. Both Senders and Receivers were endowed with 25€. Senders could transfer to the receiver any multiple of 5€ from 0€ to 25€. The transferred amount would be multiplied by two and be allocated to the Receiver. We applied the strategy method to the Receivers' decisions, so subjects had to indicate in a form the amount they wished to return for each of the possible six options available to the Sender. Receivers could send back any amount between zero and the sum of the 25€ endowment and the amount transferred by the Sender, multiplied by two. We used a multiplicative factor of two, instead of the customary factor of three, mainly for budget reasons. In their meta-analysis, Johnson and Mislin (2011) show that decreasing the multiplicative factor from three to two has no effect on the amount sent, while having a *positive* effect on the return share. After the two experimental choices, we elicited subjects' beliefs and administered the attitudinal and demographic questionnaire.

Our treatments varied the composition of the pairs in the TG. Only members took part in the ingroup treatment. Subjects were matched with a member of the same association from which they had been contacted by experimenters, who was resident in the province of Parma or surrounding provinces. This person was participating in the other room[9]. The outgroup treatment included both members and non-members. No mention was made of the fact that some people were association members and some were not. Rather, instructions highlighted that participants had been contacted from a large cross-section of

[9] The instructions in the ingroup treatment read: *"The person with whom you will be paired is a member of the Association X of which you are also a member, and is resident in Parma, or its province, or in neighbouring provinces. He was asked to take part in the research in a similar way to how you have been contacted"*.

residents of the province of Parma and surrounding provinces.[10] A control question included in the questionnaire asked subjects to state whether they thought they knew personally people present in the other research room. Around 41% (7%) of members participating in the ingroup (outgroup) treatment answered positively to such question. This difference is statistically significant ($P<0.001$; Mann-Whitney test; all tests reported are two-tailed). This confirms the significantly higher social distance that members experienced in the outgroup compared to the ingroup treatment.

III. Results

A. Comparison between members and non-members' behaviour

The first hypothesis we want to test concerns the propensity to trust and to be trustworthy in real groups *vis-à-vis* non-members. Table S3 and S5 in the SOM report descriptive statistics over sending rates broken down by association and association type, and for the whole group of associations. On average, members sent 59.3% of their endowment – 61.2% in the ingroup treatment and 57.9% in the outgroup treatment. Non-members sent on average 42% of their endowment. Such values are roughly in line with those observed in other TG experiments[11].

[10] The instructions in the outgroup treatment read: *"The person with whom you will be paired is resident in the province of Parma or in neighbouring provinces. This person has been contacted within a large sample of people of Italian citizenship residing in Parma, or its province, or in neighbouring provinces. We have contacted more than a thousand people from various age groups and socio-economic status, to participate in this research."*

[11] According to the meta-analysis carried out on 162 TG by Johnson and Mislin (2011), trustors send on average 50% of their endowment, with the percentage rising to 53% for studies conducted in Europe. We note that the corresponding value for non-members in our study is lower, though the variance of senders' behaviour in TGs is high, the observed range lying between 22% and 89%. Johnson and Mislin (2009) find that student samples normally have lower sending rate than adult samples, and that the multiplicative factor is irrelevant. We conjecture that the lower than average sending rate in our experiment is due to stake size effects - on which Johnson and Mislin (2011) cannot draw firm conclusion-, and to the lack of show-up fees in our sample.

Figure 1, Panel a, plots the histograms for sending rates for non-members, members participating in the outgroup condition, and members participating in the ingroup condition. It is evident that the distribution for members is more skewed to the right than for non-members. 17% of non-members sent nothing to the responder, while 3% and 2% of members participating in the outgroup and ingroup condition, respectively, did so. While 39% of non-members transferred more than 10 tokens to the responder, this percentage rises to 62% for members participating in the outgroup condition, and to 64% for members participating in the ingroup condition. Figure 1, Panel b, uses box plots to compare sending rates in our experiment. The distribution of observations coming from members involved in the outgroup treatment is clearly shifted towards the top end of the sending rates in comparison to the distribution of non-members' sending rates. Moreover, the distribution of sending rates in the ingroup treatment seems virtually indistinguishable from the distribution in the outgroup treatment, the median sending rate being 61% in both cases.

Figure 2 plots the distribution of the sending rate per individual association in the outgroup (Panel a) and ingroup (Panel b) treatments. The sending rate of non-members is also reported for comparison. Although some variability seems to exist between associations, a Kruskall-Wallis test fail to reject the null hypothesis that sending rates come from the same distribution. This holds both in the aggregate (chi-squared with ties=10.507; p=0.31) and when the sample is broken down into the ingroup (chi-squared =12.808; p=0.17) and the outgroup treatments (chi-squared =13.77; p=0.13). Thus, in spite of the broad differences in the types of associations that were selected (see Section II and SOM: Section III), the behaviour of their members seems overall remarkably homogenous. It is noteworthy that the median sending rate in individual association in the ingroup treatment is always greater than that observed among non-members, whilst it is always greater, apart from one association, in the outgroup treatment.

We now compare members' sending rates to non-members'. We first conduct a Wilcoxon sign test over differences in the mean sending rate in the ten associations in the outgroup treatment against the mean sending rate among non-members. The null hypothesis is that the median of the differences is zero; no further assumption is made about the distributions. The null hypothesis is rejected at the 5% level ($p=0.022$)[12].

We then fit an ordered logit model to our data. This includes some standard demographic controls and a dummy variable identifying dropouts. Table 1 reports the results for the variables of main interest in our analysis. All covariates used in the regressions are defined in the SOM, Table S2, and full estimation results are reported in the SOM: Table S6, columns 1-2. Descriptive statistics are reported in SOM: Table S5. The first specification (Table 1, column 1) shows that members' sending rates are overall significantly higher than non-members ($p<0.001$). In the second specification (Table 1, column 2) we identify members participating in the ingroup treatment (variable 'Member_Ing') and in the outgroup treatment (variable 'Member_Out'). The results are unchanged. Members transfer significantly more than non-members both to people from the general population ($p=0.007$) and to fellow members ($p<0.001$). The analysis of marginal effects (see SOM: Table S6bis) shows that members always transfer – apart from one exception – outcomes greater than (lower or equal to) 10 tokens with a significantly higher (lower) probability than never-members. This occurs for both members participating in the ingroup and the outgroup condition. We conclude:

Result 1: Association members send significantly more than non-members both when matched with fellow group members and when matched with individuals from the general population.

[12] A sign test conducted on the median sending rate would give the same result.

TABLE 1: ANALYSIS OF SENDING RATES AND RETURN RATES: EFFECTS OF MEMBERSHIP AND TREATMENT

	(1)	(2)	(3)	(4)
Dependent Variable:	Tokens Sent	Tokens Sent	Return Rate	Return Rate
Member	1.015***		0.0834***	
	(0.275)		(0.0293)	
Member_Ing		1.399***		0.104***
		(0.316)		(0.0335)
Member_Out		0.796***		0.0716**
		(0.297)		(0.0302)
Observations	320	320	1,920	1,920
Pseudo R^2 / chi2	0.0764	0.0814	418.7	424.9

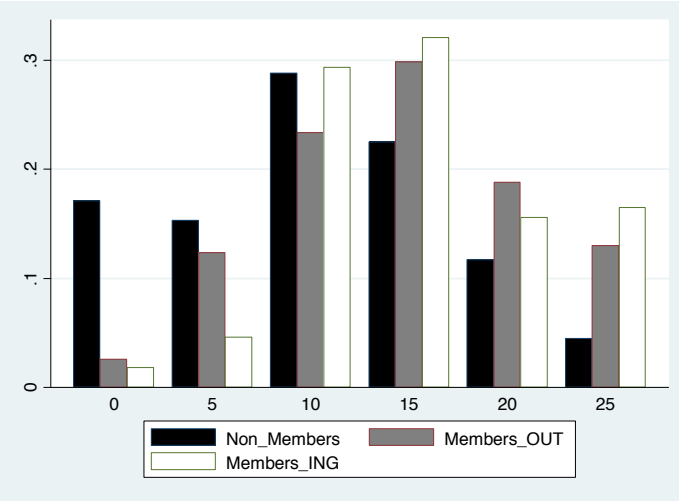
Notes: An ordered logit model has been fitted to the analysis of the number of tokens sent by the sender (columns 1-2). The possible levels of the dependent variable are all multiple of 5 from 0 to 25. Standard errors reported in brackets are robust to heteroschedasticity. A Tobit model has been fitted to the receiver's return share in models in columns 3-4. The censoring values are 0 (lower limit) and the total possible amount which the receiver may have returned (upper limit). Bootstrapped standard errors (generated in 1000 repetitions) are reported in parenthesis. Coefficients for all other covariates are reported in SOM: Table S6. Pseudo R^2 (chi2) has been reported for the logit (Tobit) models. ***: $p<0.01$, **: $p<0.05$, *: $p<0.1$.

As shown in Degli Antoni and Grimalda (2013), these results are robust to the inclusion of one's expectations over both sender's and receiver's behaviour. In fact, members and non-members do not form significantly different expectations in the outgroup treatment. The demographic effects are consistent with previous research on the determinants of trust (Fehr et al., 2002; Bellemare and Kroger, 2007; Ermisch and Gambetta, 2010).

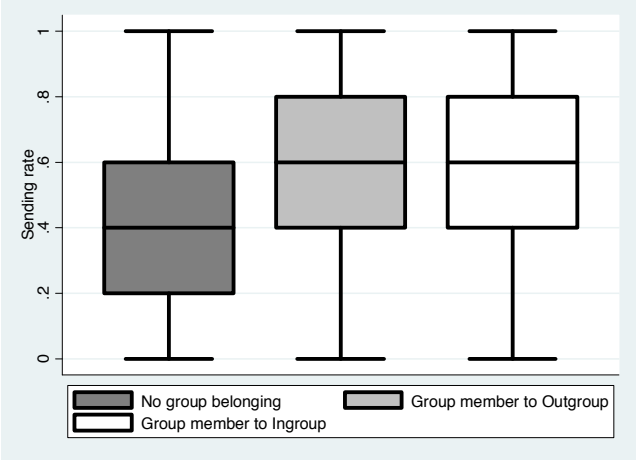
We now turn to the analysis of receivers' choices. Tables S4A-4G and Table S5 in the SOM report descriptive statistics for return rates, broken down by association, association type, membership, for each of the possible transfer level, and the average over the transfer levels.

FIGURE 1: HISTOGRAM AND BOX PLOT FOR SENDING RATE BY MEMBERSHIP/TREATMENT

Panel a: Histogram

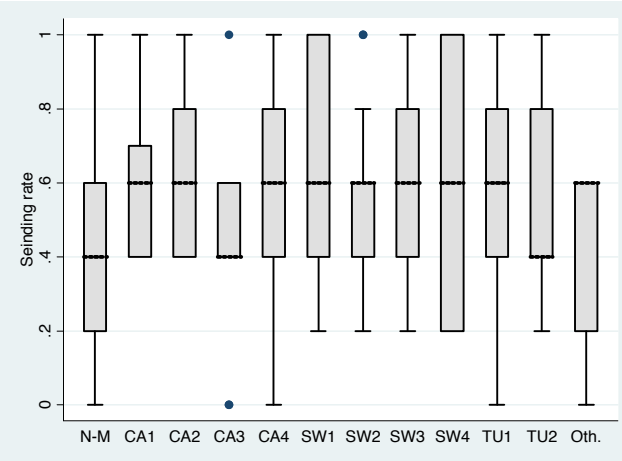
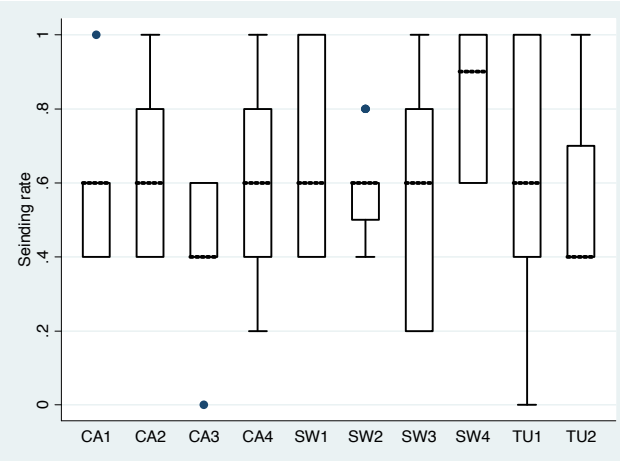


Panel b: Box Plot



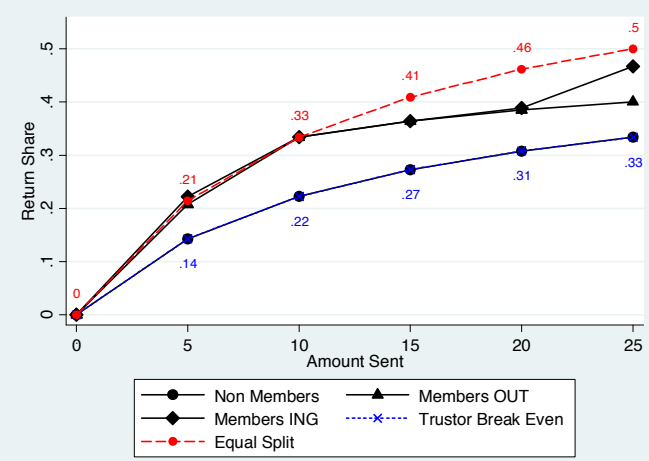
Notes: Panel (a): Non-members (dark-shaded bars) identify histograms for non-members in our experiment. Members_OUT (medium dark-shaded bars) identify histograms for members participating in the outgroup treatment in our experiment. Members_ING (white-filled bars) identify histograms for members participating in the ingroup treatment in our experiment. (Panel b): "No group belonging" denotes non-members in our experiment. "Group member to Outgroup" denotes sending rates towards *outgroup* members made by members. "Group member to Ingroup" denotes sending rates towards *ingroup* members made by members. The box upper (lower) hinge identifies the 75th (25th) percentile. The dotted line inside the box highlights the median of the distribution. The upper (lower) whiskers departing from the box identify the upper (lower) adjacent values. The circles identify outside values.

FIGURE 2: BOX PLOTS PER ASSOCIATION IN OUTGROUP TREATMENT (PANEL A) AND INGROUP TREATMENT (PANEL B)

Panel A: Non-members and association members in Outgroup treatment	Panel B: Association members in Ingroup treatment
	

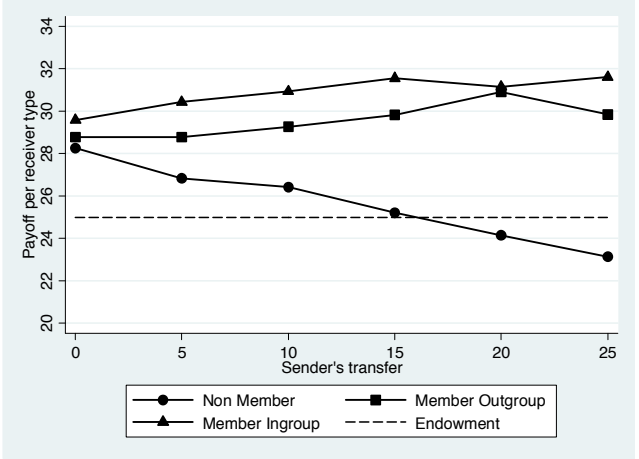
Notes: N-M: Non-members; CAx, x={1, 2, 3, 4} denote the four cultural associations; SWx, x={1, 2, 3, 4} denote the four social welfare associations; TUx, x={1, 2} denote the two trade union associations. Oth: Other associations. See Figure 1 for description of box plots.

FIGURE 3: MEDIAN RETURN RATES PER MEMBERSHIP/TREATMENT



Note: The red dashed line and the blue line represent two relevant hypothetical responses by the trustee. The red long-dashed line identifies the "Equal Split" return rate, i.e. the return rate that would allow sender and responder to end up with an equal payoff. The blue short-dashed line denotes the "Trustor Break Even" return rate, i.e. the return rate that makes the amount returned equal to the amount sent. The numeric values for both lines have been reported above and below their markers, respectively. The Trustor Break Even line coincides with the Non-Members' return share line for all their values.

FIGURE 4: AVERAGE PAYOFFS PER MEMBERSHIP/TREATMENT



Note: The dashed line "Endowment" refers to the 25 Euros originally allocated to both players.

Bundling all possible transfer levels together, members returned on average 32.4% of their available endowment (31.3% in the outgroup treatment, and 34% in the ingroup treatment), while non-members returned on average 24.3% of their available endowment[13]. We run a series of Kruskall-Wallis tests on the null hypothesis that return rates come from the same distribution for all of the ten associations. We run tests separately for the ingroup and outgroup treatments, for each of the possible six transfer levels. Interestingly enough, the null is always rejected in the ingroup treatment, but is never rejected in the outgroup treatment[14]. This suggests that associations may be rather idiosyncratic *internally* with respect to how reciprocity norms are applied within the association, but are instead rather homogenous *externally*, when it comes to interacting with people from the society at large. Figure 3 plots the median return rates for members and non-members for each of the possible transferred amounts. Figure 3 shows that the median non-members' return rate coincides with break-even for any of the six possible transferred amounts. This means that 50% of the times a sender who is matched with a non-member ends up in a loss. This is in line with Bellemare and Kroger (2007). On the contrary, the median members' return rate is always above the break-even line for members. No appreciable differences in members' behaviour between the ingroup and the outgroup treatments can be detected.

[13] Johnson and Mislin (2011) report that the mean return rate in the 137 TG they surveyed in their meta-analysis is equal to 37.2% in the whole sample and to 38.2% in Europe. The values emerging in our study are quite lower. This may be partially explained by the fact that subjects took up both roles in our experiment. Johnson and Mislin (2011) show that this has a negative effect, especially on return rates. This can only affect receivers in our experiment, because when subjects made their decision as senders they did not know they would have later been making a decision as receivers. The higher monetary incentives used in our study compared to other studies can also affect the return rate negatively. It has to be noted that the variability of return rates in TGs can be quite high, as it can range from a minimum of 10.8% to a maximum of 81.2% (Johnson and Mislin 2011).

[14] The p-values for the ingroup treatment are: 0.040 (Transfer =0); 0.009 (Transfer =5); 0.009 (Transfer =10); 0.055 (Transfer =15); 0.054 (Transfer =20); 0.067 (Transfer =25). The p-values in the outgroup are: 0.48 (Transfer =0); 0.50 (Transfer =5); 0.77 (Transfer =10); 0.59 (Transfer =15); 0.38 (Transfer =20); 0.47 (Transfer =25).

Mann-Wilcoxon tests reject the null hypothesis that the distribution of return rates by members involved in the outgroup treatment and non-members is the same for any positive sending level ($p<0.01$ in all five cases), while it fails to reject the hypothesis when the amount sent was 0 ($p=0.97$). Moreover, it only finds evidence of ingroup favouritism, i.e. members returning more in the ingroup than in the outgroup treatment, when the transferred amount is either 0 ($p=0.076$) or 5 ($p=0.04$). In all other cases the behaviour of members participating in the ingroup treatment is indistinguishable from the behaviour of members participating in the outgroup treatment.

We further analyse receivers' choices via a Tobit model. The dependent variable is receivers' return rate, i.e. the amount returned divided by the total sum that could have been returned. The Tobit model is censored at the lowest possible level of return and at the highest possible level of return. Receivers made six different choices under the strategy method (see Section II). We model this panel component of our data with a random effects model. The econometric specification includes the same controls as those used in the specification for the sending rate, with the only addition of a linear and a quadratic term for the transferred amount. Reciprocity-concerned individuals may condition their return rate on the sender's initial transfer. Moreover, existing studies on trustworthiness reveal that return rates increase non-linearly with the transferred amount, hence the inclusion of the quadratic term. Table 1 shows the results for the variables of main interest in our analysis. The full results are reported in the SOM: Table S6, columns 4-5.

Table 1, column 3 shows that the dummy variable identifying group members has a positive coefficient ($p=0.006$). This means that group members are *ceteris paribus* more likely to return higher sums to senders, given a certain transfer by the sender. The second regression (Table 1, column 4) shows that this is the case both in the ingroup ($p=0.002$) and in the outgroup treatment ($p=0.017$). We conclude:

Result 2: Association members return to senders significantly more than non-members, given a certain transfer by the sender. This is the case in both the outgroup and ingroup treatments.

B. Do members discriminate in favour of fellow members?

The other hypothesis that we want to test concerns the existence of ingroup bias. We consider our unit of analysis to be the association. For this reason we run tests taking as an "observation" the mean (or median) behaviour of members belonging to the same association. We first conduct a Wilcoxon sign test on sending rates. The null hypothesis is that the mean sending rate in the ingroup treatment is the same as in the outgroup treatment. We find no evidence to reject this hypothesis ($p=1.00$). Since the mean sending rate is higher in the ingroup treatment than in the outgroup treatment in exactly five cases out of ten, the hypothesis of an ingroup bias is soundly rejected. The same occurs considering the median sending rate. In this case we have four ties, and four (two) associations for which the median is *higher* in the outgroup (ingroup) treatment.

We then fit an ordered logit model interacting each association with dummies identifying participation in the ingroup or outgroup treatments. We examine the hypothesis that sending rates are the same for members and non-members for each association by conducting a series of Wald tests on the pair of coefficients relative to the same association in the ingroup and the outgroup treatment. These are reported in Table 2A (see SOM: Table S6, column 3 for the full results). Only two associations out of ten show a significant ingroup discrimination effect. Such are the trade union TU1 ($p<0.01$) and the social welfare association SW4 ($p=0.033$). Incidentally, such associations are the largest and the smallest in our sample (see SOM: Section III), hinting at the possibility that association size does not have a clear-cut effect on ingroup bias. On the contrary, the cultural association CA2 shows significant outgroup favouritism ($p=0.049$). In the remaining associations, five reveal a tendency

towards ingroup favouritism, while two exhibit a tendency towards outgroup favouritism. However, such tendencies are not statistically significant in any of those seven cases. We conclude:

Result 3: According to a sign test, the null hypothesis that sending rates are the same in ingroup and outgroup treatments is rejected. The econometric analysis reveals that two associations out of ten present significant ingroup favouritism, while one exhibits significant outgroup favouritism, and the remaining seven show no significant difference between ingroup and outgroup treatments. We conclude that the hypothesis of a significant ingroup effect for association members is not supported by our data.

As for receivers' behaviour (Table 2B and SOM: Table S6, column 6), we only find one association out of ten showing significant ingroup favouritism. That is SW4 (p=0.023). In all other cases, a Wald test fails to reject the null hypothesis that return rates are the same in the ingroup and the outgroup. It is worth noting that in nine cases out of ten the sign of the difference is positive, while in only one case is it negative. We conclude:

Result 4: Only in one association do members return significantly more to fellow members than non-members. Even if returns rates are generally higher vis-à-vis members than non-members, there is not enough evidence supporting the hypothesis of ingroup favouritism.[15]

[15] Behavioural differences between members of Olsonian and Putnamesque associations are analysed in a companion paper.

TABLE2A: ANALYSIS OF INGROUP EFFECTS PER ASSOCIATION

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent Variable:	Tokens Sent Association CA1	Tokens Sent Association CA2	Tokens Sent Association CA3	Tokens Sent Association CA4	Tokens Sent Association SW1	Tokens Sent Association SW2	Tokens Sent Association SW3	Tokens Sent Association SW4	Tokens Sent Association TU1	Tokens Sent Association TU2
Member_Ing	0.567									
(β_{MI})		1.078*	0.615	1.421**	1.712	1.386***	1.502*	2.636***	2.133***	1.301
	(0.612)	(0.582)	(0.480)	(0.599)	(1.294)	(0.514)	(0.822)	(0.697)	(0.570)	(0.829)
Member_Out										
(β_{MO})	1.594	3.260***	0.595	0.895*	1.607***	0.485	1.608**	-0.406	0.607	0.455
	(0.983)	(1.006)	(0.677)	(0.464)	(0.606)	(0.562)	(0.668)	(1.300)	(0.470)	(0.868)
β_{MI}- β_{MO}	-1.028	-2.181	0.193	0.525	0.105	0.900	-0.106	3.042	1.526	0.846
	(1.118)	(1.109)**	(0.682)	(0.670)	(1.367)	(0.615)	(0.913)	(1.431)**	(0.566)***	(1.057)
Model: Ordered Logit; Observations: 320; Pseudo R^2:0.0814; chi2: 93.84										

Notes: See Table 1. Coefficients for all other covariates are reported in SOM: Table S6, column 3. ***: p<0.01, **: p<0.05, *: p<0.1.

TABLE 2B: ANALYSIS OF INGROUP EFFECTS IN SELECTED ASSOCIATIONS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent Variable:	Return Rate Association CA1	Return Rate Association CA2	Return Rate Association CA3	Return Rate Association CA4	Return Rate Association SW1	Return Rate Association SW2	Return Rate Association SW3	Return Rate Association SW4	Return Rate Association TU1	Return Rate Association TU2
Member_Ing										
(β_{MI})	-0.0696	0.0220	0.133*	0.0512	0.322**	0.173***	0.100	0.159	0.0963*	0.128
	(0.0682)	(0.0482)	(0.0737)	(0.0394)	(0.147)	(0.0654)	(0.0631)	(0.107)	(0.0545)	(0.0816)
Member_Out										
(β_{MO})	0.0284	0.0109	0.118	0.0271	0.0731	0.140**	0.0926*	-0.107	0.0806*	0.0760
	(0.0573)	(0.0494)	(0.0867)	(0.0408)	(0.0523)	(0.0625)	(0.0499)	(0.0769)	(0.0412)	(0.0719)
β_{MI}- β_{MO}	-0.098	0.111	0.015	0.024	0.249	0.033	0.008	0.265	0.016	0.052
	(0.079)	(0.050)	(0.108)	(0.042)	(0.158)	(0.074)	(0.070)	(0.130)**	(0.053)	(0.091)
Model: Tobit; Observations: 1,920; chi2: 486.0										

Notes: See Table 1. Coefficients for all other covariates are reported in SOM: Table S6, column 6. ***: p<0.01, **: p<0.05, *: p<0.1.

C. The effect of intensity of group membership

Not only does the AMBT hypothesis claim that joiners are more trusting than non-joiners, but it also posits a causal effect of joining on trust. However, the alternative idea that more trusting people are more likely to join, is also plausible. Putnam (1995) suggests that both linkages operate. The empirical support for either causal effect is inconclusive. Claiburn and Martin (2000) use longitudinal data and find no evidence in their "youth sample", and contrasting evidence in their "parent sample", for the AMBT hypothesis. They conclude that the impact of membership may be relatively short-lived. Wollebaek and Selle (2002), too, do not find any confirmation of the idea that active membership makes a difference in developing generalised trust. However, Brehm and Rahn (1997) find higher likelihood for a causality effect from group memberships to interpersonal trust than the reverse in their structural equations model. Stolle (1998) tests for whether higher engagement levels in associations, measured by time spent in an association, are linked with higher trust levels. She fails to find a durable relationship between these two variables. However, she finds an early trust boost from joining, which occurs within the first year of joining.

Our design allows us to test this idea in several different ways. First, we look at dropouts' behaviour. If involvement in association is a relevant factor for promoting pro-sociality, we would expect to see some durable differences between dropouts and non-members' behaviour. However, our analysis shows that this is not the case. Dropouts give 40.6% of their endowment when acting as senders, and return on average 22% of their available endowment when acting as receivers. These rates are indistinguishable from those of non-members ($p=0.64$ for sending rates, see SOM: Table S6, column 2; $p=0.94$ for return rates, see SOM: Table S6, column 5), and are significantly lower than those of members in the outgroup condition ($p=0.020$ for sending rates; $p=0.041$ for return rates).

However, like any form of capital, pro-sociality may "depreciate" over time in the absence of some "investment", i.e. interaction with other members. We find some limited evidence for this effect. If we consider the number of years since an individual has had her last active membership in an association, this variable turns out to be significant in a regression limited to dropouts, where the dependent variable is sending rates and some demographic variables have been excluded because of the small sample size ($p=0.098$; not reported). However, the same variable does not turn out to be significant neither for return rates, nor when inserted in the whole sample regressions. We conclude:

Result 5: We find no evidence that participation in an association has any long-lasting effects in dropouts. However, we find some limited evidence that people who dropped out more recently send more than less recent dropouts to receivers.

If membership does have some positive role in fostering co-operation norms, then we should expect members who have been part of an association for a longer spell to show higher trust and trustworthiness than others. We try different specifications and use different variables to examine this link.

First, we use the number of years spent in associations by an individual, expressed as a percentage of their age. We call this variable "Years". The coefficient for "Years" is not significantly different from 0 ($p=0.70$), and the sign is in fact negative (see SOM: Table S7, column 1). The coefficient for "Years" is, again, not significantly different from 0 neither when it is interacted with "Ingroup" nor with "Outgroup". (See Table 3, column 1 and SOM: Table S7, column 2 for the full results). A possible problem with the variable "Years" is that it is defined over a linear and continuous metric. However, it is likely that the impact of membership is not linear. Such impact may be envisaged as being strong in the first spell after having joined an association, and to plateau later on. However, dummy variables identifying

various lengths of associational activity are not significant either (SOM: Table S7, column 3).

TABLE 3A: ANALYSIS OF TOKENS SENT:
EFFECTS OF INTENSITY OF ASSOCIATIONAL PARTICIPATION

	(1)	(2)	(3)
Dependent Variable:	Tokens sent	Tokens sent	Tokens sent
Intensity Measure	Years	Hours	Number
Intensity_Ing (β_{IntI})	0.0843	0.0210*	0.0975
	(0.905)	(0.0125)	(0.140)
Intensity_out (β_{Int0})	-0.508	-0.0791***	-0.00608
	(0.864)	(0.0292)	(0.103)
$\beta_{IntI} - \beta_{Int0}$	-0.593	-1.000***	-0.104
	(1.222)	(0.031)	(0.175)
Observations	312	209	319
Pseudo R2	0.0815	0.110	0.0815

Notes: See Table 1. Coefficients for all other covariates are reported in SOM: Table S7-S10. ***: p<0.01, **: p<0.05, *: p<0.1.

TABLE 3B: ANALYSIS OF RETURN RATES:
EFFECTS OF INTENSITY OF ASSOCIATIONAL PARTICIPATION

	(1)	(2)	(3)
Dependent Variable:	Return rate	Return rate	Return rate
Intensity Measure	Years	Hours	Number
Intensity_Ing (β_{IntI})	0.00829	0.00109	0.00506
	(0.105)	(0.00205)	(0.0144)
Intensity_out (β_{Int0})	-0.164*	-0.00350	-0.00211
	(0.0866)	(0.00331)	(0.0112)
$\beta_{IntI} - \beta_{Int0}$	-0.172	0.005	-0.007
	(0.130)	(0.004)	(0.019)
Observations	1,872	1,818	1,914
chi2	499.3	0.137	0.148

Notes:See Table 1. Coefficients for all other covariates are reported in SOM: Table S7-S10. ***: p<0.01, **: p<0.05, *: p<0.1.

As far as return rates are concerned, "Years" appear to have a negative effect, though it is not significant (p=0.163) (SOM: Table S7: columns 4). When "Years" is interacted with the two treatments, it shows a weakly significant *negative* effect on return rates when association members are

matched with people from the general public (p=0.059) (Table 3b, column 1 and SOM: Table S7, column 5 for the full results), while the effect is indistinguishable from zero in the ingroup treatment. Even in this case, no non-linear effects on return rates by "Years" can be detected (SOM: Table S7, columns 6). We conclude:

Result 6: We do not find any effect of increased length of association membership on increased trust. We instead find a weakly significant *negative* effect of the length of association membership on members' trustworthiness towards people from the general public.

We then look at the impact of hours actually spent volunteering with associations (defined as "Hours"). In the light of the emphasis given by Putnam (2000) on the time actually spent in associations working alongside other members to acquire social capital, this seems a particularly relevant variable to test for the AMBT hypothesis. Even in this case though, the effect is not significantly different from 0 when the variable is entered directly in the econometric model (p=0.55) (SOM: Table S8, column 1). Moreover, the sign of "Hours" is negative and strongly significant in the outgroup treatment (p=0.007), whilst it is positive and weakly significant in the ingroup treatment (p=0.093) (Table 3, column 2 and SOM: Table S8, column 2 for the full results). This differential effect outgroup-ingroup is strongly significant (p=0.001). The negative sign observed for "Hours" is surprising and is consistent with the idea that increasing involvement in the associations fosters moderate group attachment at the expense of others. Reverse causality effects may also be at work. Breaking down the analysis by association types shows that the negative effect for "Hours" is significant for CA and TU, but not for SWA (See SOM: Table S8, columns 3-4).

As for the relationship between "Hours" and trustworthiness, we do not detect any significant effect, though the signs of the coefficients are the same

as those found for sending rates (Table 4, column 2, and SOM: Table S9, columns 1-4). We conclude:

Result 7: We find a significant difference in the impact of the number of hours spent in associations on sending rates. The impact is negative in the outgroup treatment, and weakly positive in the ingroup. Such an impact is strongest in CA and TU.

Another hypothesis that we investigate is whether being a member of more than one association increases trust in others. Multiple memberships allow individuals to amplify their network of connections, thus magnifying the beneficial effects of social capital. Overlapping networks intensify the cogency of reciprocity norms, increasing the density of social relations. This should have a beneficial effect at the societal level (Putnam 2000), but it should also spur individuals to act more trustingly. Joining more associations increases the probability that an individual is faced with people from diverse backgrounds, goals, and preferences. Theoretical and empirical analyses claim that this should engender a positive effect on individuals' pro-sociality (Almond and Verba 1963; Putnam, Leonardi, and Nanetti, 1993; Wollebaek and Selle 2002; Paxton 2007). To test for this idea, we deploy the number of associations of which an individual is a member (labelled "Number") in our econometric analysis. This does not exert any significant effect neither in the aggregate ($p=0.54$) (SOM: Table S10, column 1), nor when it is broken down into ingroup and outgroup treatments ($p=0.65$ for outgroup; $p=0.49$ for ingroup) (Table 3, column 3, and SOM: Table S10, column 2 for the full results). We also test for a non-linear effect of "Number", finding no significant effects (Table S10, column 3). We do not detect any significant effect of 'Number' on trustworthiness, either. (Table 4, column 3, and SOM: Table S10, columns 4-6). We conclude:

Result 8: We do not find any systematic effect of an increase in the number of associations on either sending rates or return rates.

V. Discussion

Some recent experiments (Hargreaves-Heap and Zizzo 2009; Chen and Li 2009) have challenged the view held by social capital scholars that groups are beneficial for the society as a whole. Group creation does not seem to bring about significant added social value in interaction with insiders, while at the same time augmenting the mistrust directed to outsiders. Others have questioned the capability of social capital to bridge the gaps between ingroups and outgroups, suggesting that the beneficial effects of group membership may remain confined to the group and not spread to the rest of society (Bowles and Gintis 2002).

Our study shows a different picture. Groups are indeed the depositories of higher levels of trust and trustworthiness than people from the general population. There is a substantial efficiency gain in interaction among group members compared to interactions between non-members. This is the case even after controlling for a large set of demographic characteristics. In spite of our selection of broadly different types of associations, patterns of behaviour seem similar across different associations. If anything, we find more variability when members interact with other fellow members than when they interact with people from the general population. These result extend, and do not contradict those mentioned above (Hargreaves-Heap and Zizzo 2009; Chen and Li 2009). As these studies dealt with *minimal* groups, their experiments can be thought of as providing the "lower bound" of the value of groups. Real groups are based on a dense network of social relationships and social ties that are likely to create emotional attachment to such groups, thus increasing co-operation rates. (Goette, Huffman, and Meier, 2012).

Most importantly, association members show significantly higher trust and trustworthiness rates than non-members even when interacting with unknown

others from the general population. In fact, they treat fellow members and non-members alike, seemingly bridging the gap between insiders and outsiders. Ingroup favouritism is extremely limited in our sample of associations, and is far from being the general rule for its members. This confirms that associations may indeed be key agents in propagating generalised trust at the level of the society as a whole, as advocated by Putnam (2000).

The final part of our analysis was devoted to testing for the hypothesis that associations have a formative role in instilling in their members pro-social attitudes that make their members more trusting and trustworthy, rather than just attracting people with such dispositions. Our conclusion is that we do not find evidence that group membership has any effect in this respect.

This evidence, taken at face value, goes in the direction of a self-selection effect rather than a formative effect of associations. It is consistent with the finding by Ruffle and Sosis (2006), who conclude, with respect to their sample of Kibbutz members, that the increased co-operation rates observed by members compared to non-members was accounted for by people who *decided* voluntarily to join kibbutz communities, rather than having born there. We believe that the results emerging from our study should be interpreted with caution. In order to fully verify the social value of associations, one would need longitudinal data. Moreover, even within a cross-sectional study, one would want to compare members' behaviour in the very early stages of their engagement with an association. Stolle (1998) finds some evidence for an initial "burst" in increased trust within the first year of joining an association, which later plateaus. In our sample we only have eight individuals who have been members of an association for no more than a year. Clearly, we would need a considerably larger sample of recent joiners to be able to offer any firm conclusion on this point.

Overall, we believe that the weak relevance of ingroup effects, and the lack of effects related to the intensity of associational involvement, may be

indicative of the special nature of the population of group members which we investigated. Our main results on association members – strongly higher co-operative behaviour, and nearly complete absence of discrimination towards outsiders – is reminiscent of the results of Leider *et al*. (2009), who show that the most generous individuals in their sample are equally inclined to co-operate with their friends and with strangers. This is consistent with the conjecture that people with high level of pro-sociality and willingness to help others are attracted by associations.

A tentative explanation of our results is that associations may not have a primary formative role in *inculcating* norms of civic behaviour, but they may rather help *maintaining* and *preserving* a pre-existing propensity to public-spiritedness and pro-sociality. This point is illustrated by one participant's comment in the debriefing session: *"I don't think that participating in an association has increased my trust in others. However, being part of an association helps maintaining my co-operative spirit, because I see many other people animated by the same sense of eagerness to help others as I have"*. The finding that dropouts behave in the same way as people who have never been part of an association, may confirm the view that staying part of an association is indeed necessary to keep one's public-spiritedness alive.

If we tried to interpret our data from an evolutionary perspective, we may speculate that associations may also have a prominent role in "sorting" individuals with high pro-sociality, enabling them to reap the benefits of mutual co-operation. Theories of cultural evolution stress the advantages of segmentation for people sharing similar pro-sociality norms of behaviour (Bowles 1999). This protects members of such groups from exploitation by defectors, securing the extra gains that co-operation generates. Additionally, our research suggests that association members may be key for co-operation to become established in the wider society. The existence of such "hard-wired" co-operators, who do not discriminate between ingroup and outgroup, may be

necessary for "conditional co-operators" to switch to co-operation rather than defection in real life.

These points can be further illustrated by looking at Figure 4. This reports the average payoff that a sender can expect when interacting with a non-member, a member involved in the ingroup and a member involved in the outgroup. It shows that trust may disappear in a society uniquely formed by non-members, because sending nothing is the payoff-maximising strategy, and net losses would be experienced for sent amounts greater than 15 Euros. Conversely, trust thrives within associations, as the payoff-maximising strategy is to send the whole endowment. Crucially, members keep high levels of trustworthiness in the outgroup, too, and the payoff-maximising strategy is to send 20 Euros in this case. Payoffs in the ingroup are greater than payoffs in the outgroup, which shows that fellow members can reap an extra benefit in comparison with people from the wider population. In all cases, people who send nothing receive a positive return, as in Fehr et al. (2002).

This analysis is consistent with the idea that members' trustworthiness is necessary to transform trust from a losing strategy to a winning strategy in outgroup interactions, provided that interactions with members are sufficiently frequent. After all, we do observe high levels of trust by non-members in our experiment - though lower than members' – which suggests that they have positive expectations – presumably based on experience – that their trust will be rewarded in at least some instances. Members' behaviour would of course be puzzling from an evolutionary perspective, and suggests that their trust and trustworthiness is the result of internalised social norms or hard-wired altruistic behaviour, rather than strategic calculations (see also Degli Antoni and Grimalda 2013). Sorting may be thus necessary for hard-wired altruistic individuals to reap higher-than-average payoffs in the ingroup, thus averaging off the lower gains experienced with non-members in the society at large. This analysis is of course speculative, but expresses in another form the idea that association members are relevant actors in the propagation of generalised trust

in society, although the psychological mechanisms whereby this comes to be the case still need to be fully understood.

VI. Conclusions

Neo-Toquevillian social capital theorists herald the role of associations in increasing generalised trust in society. Since the "alarm call" launched by Robert Putnam (2000) over the disappearance of associations from the US society and the consequent possible threat to democratic values, many studies have been devoted to the understanding and the quantification of the "value of groups". However, we have surprisingly little evidence on the extent to which association members are indeed prepared to "cross the line" and become "good citizens" after having been good "team players". As Stolle and Rochon (1998) put it, such a disposition to trust unknown others entails a "leap of faith" with respect to trusting known others. Recent research by experimental economists claimed that the net effect of minimal group is in fact negative. Surprisingly enough, virtually no experimental research has been conducted on the very people who are the main actors in propagating social capital in a society, that is, association members.

This research is the first to address these issues in an experimental setting. Association members were involved in anonymous TG interactions with fellow members and people from the general population. The recruitment of a control group who have never been association members enables us to quantify the added value of interactions within the group or outside the group.

We found compelling evidence that association members are significantly more trusting and trustworthy than non-members. More importantly, this is the case both when members interact among themselves and when they interact with people from the general population. In fact, we only find sporadic evidence supporting ingroup favouritism. As far as trust is concerned, only two (out of ten) associations show a significant ingroup favouritism, while one association displays significant *outgroup* favouritism. As far as

trustworthiness is concerned, only in one case does significant ingroup favouritism emerge. Hence, group members appear to treat fellow members in almost the same way as strangers from the general population. This is a key issue for social capital theory. If social capital is a resource for the society as a whole, and not just for the group to which people belong, the economic gains produced by compliance with co-operative norms must be extended to the society at large rather than remaining confined to the group. In this respect, the social capital seems to pass this first test. According to our results, the co-operative surplus made possible by increased trust from association members does *not* seem to remain confined *within* the boundaries of associations, but appears to be extended to the society at large.

However, we did not find any evidence that the increased pro-sociality that we observe in group members is the result of group participation *per se*. If the AMBT were true, we would expect that individuals with a longer and more intense associational life would show higher pro-social behaviour. However, the span of one's associational life, the number of hours spent volunteering in an association, and the number of associations joined, have no positive effects on either trust or trustworthiness. In fact, they even appear to have "perverse" effects, as an increase in the number of hours spent volunteering is associated with *decreased* trust towards general others, and a longer length of one's associational spell is associated with *reduced* trustworthiness. In the former case such effects are strongly significant. It seems that, if anything, people who spend longer hours in their associations, or have been members for a longer part of their life, develop *mistrust* towards strangers. In all likelihood, some reverse causation is at work here. More research is necessary to ascertain the effect of joining an association in its early stages, because, as suggested by Stolle (1998), the positive "socialization" effect of associational life may be concentrated in as early as the first year from joining an association.

We believe that our research has helped uncover relevant evidence relative to the specific pro-social patterns of association members. According to the

Italian National Institute for Statistics (ISTAT), active association members represent about 10% of the Parma population, a percentage that is comparable with what is found in other countries. Such 10% of people may prove to be crucial for maintaining co-operative norms of behaviour in society, as social capital theorists argue, although this may be the case for reasons different from those that have been advanced. Further investigation could explore how the mechanisms of transmission from the ingroup to the outgroup take place, and how these can be put to service of the society's greater good.

REFERENCES

Almond, Gabriel A., and Sidney Verba. 1963. *Political Attitudes and Democracy in Five Nations*. Princeton: Princeton University Press.

Arrow, Kenneth J. 1974. *The Limits of Organization*. New York: Norton.

Bellemare, Charles, and Sabine Kröger. 2007. "On representative social capital." *European Economic Review* 51(1): 183-202.

Berg, Joyce, John Dickhaut, and Kevin McCabe. 1995. "Trust, reciprocity, and social history." *Games and economic behavior*, 10(1): 122-142.

Bernhard, Helen, Urs Fischbacher, and Ernst Fehr. 2006. "Parochial altruism in humans." *Nature*, 442(7105): 912-915.

Bowles, Samuel, and Herbert Gintis. "Social Capital And Community Governance." *The Economic Journal*, 112(483): 419-436.

Brehm, John, and Wendy Rahn. 1997. "Individual-level evidence for the causes and consequences of social capital." *American journal of political science*, 41(3):999-1023.

Brewer, Marilynn B. 1999. "The psychology of prejudice: Ingroup love and outgroup hate?." *Journal of social issues* 55(3): 429-444.

Charness, Gary, Luca Rigotti, and Aldo Rustichini. 2007. "Individual behavior and group membership." *The American Economic Review*, 97(4):1340-1352.

Chen, Yan, and Sherry Xin Li. 2009. "Group identity and social preferences." *The American Economic Review*, 99(1):431-457.

Claibourn, Michele P., and Paul S. Martin. 2000. "Trusting and joining? An empirical test of the reciprocal nature of social capital." *Political Behavior*, 22(4): 267-291.

Coleman, James S. 1990. *Foundations of Social Theory*, Cambridge: Harvard University Press.

Degli Antoni, Giacomo, and Gianluca Grimalda. 2013. "Optimistic expectations or other-regarding preferences? Analysing the determinants of trust among association members." Working Papers 2013/21, Economics Department, Universitat Jaume I.

Eckel, Catherine C., and Philip J. Grossman. 2005. "Managing diversity by creating team identity." *Journal of Economic Behavior & Organization*, 58(3): 371-392.

Engelmann, Dirk, and Urs Fischbacher. 2009. "Indirect reciprocity and strategic reputation building in an experimental helping game." *Games and Economic Behavior*, 67(2): 399-407.

Ermisch, John, and Diego Gambetta. 2010. "Do strong family ties inhibit trust?." *Journal of Economic Behavior & Organization* 75(3): 365-376.

Falk, Armin, and Christian Zehnder. 2013. "A city-wide experiment on trust discrimination." *Journal of Public Economics*, 100(c): 15-27.

Fehr, Ernst and Gächter, Simon. 2000. "Fairness and Retaliation: The Economics of Reciprocity." *Journal of Economic Perspectives*, 14(3): 159-181.

Fehr, Ernst, and Urs Fischbacher. 2002. "Why social preferences matter–the impact of non-selfish motives on competition, cooperation and incentives." *The economic journal*, 112(478): 1-33.

Fehr, E, U. Fischbacher, B. von Rosenbladt, J. Schupp, and G. Wagner. 2002. "A Nation-Wide Laboratory - Examining trust and trustworthiness by integrating behavioral experiments into representative surveys", *Schmollers Jahrbuch*, 122(4): 519-542.

Fershtman, Chaim, and Uri Gneezy. 2001. "Discrimination in a segmented society: An experimental approach." *The Quarterly Journal of Economics*, 116(1): 351-377.

Fershtman, Chaim, Uri Gneezy, and Frank Verboven. 2005. "Discrimination and nepotism: the efficiency of the anonymity rule." *The Journal of Legal Studies*, 34(2): 371-396.

Finocchiaro Castro, Massimo. 2008. "Where are you from? Cultural differences in public good experiments." *The Journal of Socio-Economics*, 37(6): 2319-2329.

Fischbacher, Urs, Simon Gächter, and Ernst Fehr. 2001. "Are people conditionally cooperative? Evidence from a public goods experiment." *Economics Letters*, 71(3): 397-404.

Goeree, Jacob K., Margaret A. McConnell, Tiffany Mitchell, Tracey Tromp, and Leeat Yariv. 2010. "The 1/d Law of Giving." American Economic Journal: Microeconomics, 2(1): 183–203.

Goette, Lorenz, David Huffman, and Stephan Meier. 2006. "The impact of group membership on cooperation and norm enforcement: Evidence using random assignment to real social groups." *The American economic review*, 96(2): 212-216.

Goette, Lorenz, David Huffman, and Stephan Meier. 2012. "The impact of social ties on group interactions: Evidence from minimal groups and randomly assigned real groups." *American Economic Journal: Microeconomics*, 4(1): 101-115.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2004. "Does local financial development matter?." *The Quarterly Journal of Economics*, 119(3): 929-969.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2006. "Does culture affect economic outcomes?." Journal of Economic Perspectives, 20(2): 23-48.

Habyarimana, James, Macartan Humphreys, Daniel N. Posner, Jeremy M. Weinstein. 2007. "Why does ethnic diversity undermine public goods provision?." *American Political Science Review*,101(4): 709-725.

Heap, Shaun P. Hargreaves, and Daniel John Zizzo. 2009. "The Value of Groups." *American Economic Review*, 99(1): 295–323.

Hoff, Karla, Mayuresh Kshetramade, and Ernst Fehr. 2011. "Caste and Punishment: the Legacy of Caste Culture in Norm Enforcement." *The Economic Journal*, 121(556): 449-475.

Johnson, Noel D., and Alexandra A. Mislin. 2011. "Trust games: A meta-analysis." *Journal of Economic Psychology*, 32(5): 865-889.

Karlan, Dean S. 2001. "Microfinance Impact Assessments: The Perils of Using New Members as a Control Group." *Journal of Microfinance*, 3(2): 75-85.

Knack, Stephen, and Philip Keefer. 1997. "Does Social capital have an economic payoff? A cross country investigation." *Quarterly Journal of Economics*, 112(4):1251-1287.

La Porta, Rafael, Lopez-de-Silanes, Florencio, Andrei Shleifer, and Robert W. Vishny. 1999. "The Quality of Government." *Journal of Law, Economics and Organization*, 15(1): 222-279.

Leider, Stephen, Markus M. Mobius, Tanya Rosenblat, and Qoch-Ahn. Do. 2009. "Directed Altruism and Enforced Reciprocity in Social Networks." *Quarterly Journal of Economics*, 124(4): 1815–51.

Liphart, Arend. 1977. *Democracy in plural societies: A comparative exploration*. Yale University Press.

Lipset, Seymour M. 1963. *Political man*. No. 43. London: Mercury Books.

Mullen, Brian, Rupert Brown, and Colleen Smith. 1992. "Ingroup bias as a function of salience, relevance, and status: An integration." *European Journal of Social Psychology* 22(2): 103-122.

Olson, Mancur. 1965. *The logic of collective action*. Harvard University Press: Cambridge MA.

Paldam, Martin. 2000. "Social capital: one or many? Definition and measurement." *Journal of economic surveys*, 14(5): 629-653.

Paxton, Pamela. 2007. "Association Memberships and Generalised Trust: A Multilevel Model Across 31 Countries." *Social Forces*, 86(1): 47-76.

Putnam, Robert D. with Robert Leonardi and Raffaella Y. Nanetti. 1993. *Making Democracy Work*. Princeton: Princeton University Press.

Putnam, Robert D. 1995. "Bowling Alone: America's Declining Social Capital." *Journal of Democracy*, 6(1):65-78.

Putnam, Robert D. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.

Ruffle, Bradley J., and Richard Sosis. 2006. "Cooperation and the Ingroup-Outgroup Bias: A Field Test on Israeli Kibbutz Members and City Residents." *Journal of Economic Behavior and Organization*, 60(2): 147-163.

Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls. 1997. "Neighborhoods and violent crime: A multilevel study of collective efficacy." *Science* 277(5328): 918-924.

Seinen, Ingrid, and Arthur Schram. 2006. "Social status and group norms: Indirect reciprocity in a repeated helping experiment." *European Economic Review*, 50(3): 581-602.

Stolle, Dietlind. 1998. "Bowling Together, Bowling Alone: The Development of Generalised Trust in Voluntary Associations." *Political Psychology*, 19(3): 497-525.

Stolle, Dietlind, and Thomas R. Rochon. 1998. "Are All Associations Alike? Member Diversity, Associational Type, and the Creation of Social Capital." *American Behavioral Scientist*, 42(1): 47-65.

Tajfel, Henri, M.G. Billig, R.P. Bundy, and Claude, Flament. 1971. Social categorization and intergroup behaviour. *European journal of social psychology*, 1(2): 149-178.

Tanaka, Tomomi, and Colin F. Camerer. 2010. "Patronizing economic preferences toward low-status groups in Vietnam." Discussion paper, Mimeo, Arizona State University.

Tocqueville, Alexis. 1840. *De la démocratie en Amérique*. English translation, *Democracy in America*. Chicago University Press: Chicago, 2000.

Truman, David Bicknell. 1971. *The governmental process*. Vol.535. New York: Knopf.

Uphoff, Norman. 1999. "Understanding Social Capital: Learning from the Analysis and Experience of Participation." In *Social Capital: A Multifaceted Perspective*, eds Partha Dasgupta, and Ismail Serageldin, 215-49. Washington: The World Bank.

Uslaner, Eric M. 2002. *The Moral Foundations of Trust*. Cambridge: Cambridge University Press.

Whitt, Sam, and Rick K. Wilson. 2007. "The Dictator Game, Fairness and Ethnicity in Postwar Bosnia." *Americal Journal of Political Science*, 51(3): 655-668.

Willinger, Marc, Clauda Keser, Christopher Lohman, and Jean-Claude Usunier. 2003. "A comparison of trust and reciprocity between France and Germany: experimental investigation based on the investment game." *Journal of Economic Psychology*, 24(4): 447–466.

van Winden, Frans, Mirre Stallen, and K. Richard Ridderinkhof. 2008. "On the Nature, Modeling, and Neural Bases of Social Ties." In Advances in Health Economics and Health Services Research, Volume 20,

Neuroeconomics, ed. Daniel Houser and Kevin McCabe, 125–59. London: Emerald Group Publishing Limited.

Wollebaek, Dag, and Per Selle. 2002. "Does Participation in Voluntary Associations Contribute to Social Capital? The Impact of Intensity, Scope, and Type." *Nonprofit and Voluntary Sector Quarterly*, 31(1): 32-61.

Yamagishi, Toshio. 2007. "The social exchange heuristic: A psychological mechanism that makes a system of generalised exchange selfsustaining." In *Cultural and ecological foundation of the mind*, eds. Radford Mark, Susumu Ohnuma, and Toshio Yamagishi, 11-37. Sapporo: Hokkaido University Press.

Yamagishi, Toshio, and Toko Kiyonari. 2000. "The group as the container of generalized reciprocity." *Social Psychology Quarterly*, 63(2): 116-132.

Zak, Paul J., and Stephen Knack. 2001. "Trust and Growth." *Economic Journal*, 111(470): 295-321.

SUPPLEMENTARY ONLINE MATERIAL (SOM)

This appendix includes:

I. Demographic characteristics of subjects

II. Descriptive statistics, legend of control variables and estimates results

III. Description of associations

IV. Sampling objectives and implementation

V. Experiment instructions and protocol

I. Demographic characteristics of subjects

Table S1 reports descriptive statistics for our three main sample groups – that is, members, never-members, and dropouts (see Section II of the paper) - with respect to the three variables that were used in the recruitment to screen subjects, that is, gender, age and education.

Apart from slightly oversampling people younger than 30 in the dropouts group, the demographic characteristics of the three groups appear very similar. The null hypothesis that the three sample groups come from the same distribution cannot be rejected in a Kruskal-Wallis test, although the p-value lies just outside the conventional levels of significance for age (Gender: p=0.9925; n1=262, n2=34, n3=77; Education: p=0.4079; n1=254, n2=33, n3=77; Age: p=0.1076; n1=262, n2=34, n3=76). All tests being reported in the SOM are two-tailed. However, the three groups appear to differ in their declared level of household income, which we did not control during recruitment due to its sensitivity for subjects' privacy (see next section). In this case, the null hypothesis that the three sample groups come from the same distribution can be rejected, although only at weak significance levels (p=0.0577; n1=218, n2=28, n3=68). Overall, Members declared higher income levels than others.

TABLE S1: SAMPLE DEMOGRAPHIC CHARACTERISTICS

Variable		Members	Never-members	Dropouts
Gender:	Female	60.38%	59.74%	58.82
Age:	<30	11.15%	13.33%	23.53%
	30-50	43.08%	42.67%	44.12%
	51-60	22.69%	26.67%	29.41%
	>60	23.88%	17.33%	2.94%
Education:	No Title	0%	0%	0%
	Primary School	1.59%	1.30%	0%
	Junior high School	15.08%	14.29%	3.03%
	Secondary School certificate (3 Years)	8.73%	5.19%	3.03%
	Secondary-School certificate (5 Years)	42.25%	45.45%	60.61%
	Bachelor's degree	25.79%	31.17%	30.30%
	Master's degree	3.97%	2.60%	0%
	PhD	1.59%	0%	0%
Obs.:		263	77	34

II. Variables definition, descriptive statistics, and estimates results

TABLE S2: DEFINITION OF VARIABLES

Sending rate	Number of tokens sent by the sender divided by the 25 Euros endowment.
Return rate	Money transferred by the receiver to the sender, divided by the total amount of money in receiver's possession. Computed for every possible transfer level. In formulas, $Return\,Rate_T = \frac{Return}{25+2*T};\ T = \{0, 5, \ldots, 25\}$. In Table S4G we use average of Return Rate over the six transfer levels.
Member	Identifies subjects who were active association members in some organisations
Dropout	Identifies subjects who belonged to associations in the past but are not active members at the time of research.
Income_Dissatisfaction	Satisfaction with personal financial situation as declared by the respondent. It is the answer to question "How well would you say that you are doing financially these days?" Possible answers were: "Living in a comfortable way" (Option 4); "Living in an acceptable way" (Option 3); "Barely getting by" (Option 2); "It goes really badly" (Option 1). Answers have been reverse-scaled and normalised to 1.
South	Identifies subjects born in Southern Italian regions. (See Degli Antoni and Grimalda 2013).
Inhabitants	Identifies subjects living in urban areas with more than 100.000 inhabitants.
Uni_Degree	Identifies subjects who attained university degree.
High_School_Diploma	Identifies subjects who attained high-school diploma ("Maturità" or "Licenza" in the Italian education system) as their highest educational achievement.
Family_Size	Answer to the question "How many members does your family have (considering only people who live with you)?"
Believer	Identifies subjects who have responded they are not atheists or agnostics to question on their religious beliefs.
Attends_Rel_Serv	Answer to the question "Normally how often do you go to church or other worship place?" Options were "Every day"; "Some times a week"; "Once a week"; "Some times a month (less than 4)"; "Some times a year"; "Never".
Health_Satisfaction	Answer to the question "All considered, how satisfied are you with your health?" Options were "Not at all" (Option 1); "A little" (Option 2); "Somewhat" (Option 3) "Very" (Option 4).
Financial_Risk	Answer to the question: "Are you generally a person who is fully prepared to take risks in financial matters, or do you try to avoid taking risks? The answer was a point in a 0-10 scale, where 0 meant: "unwilling to take risks" and 10 meant: "fully prepared to take risk".
Errors	Number of mistakes in the 6-question comprehension quiz administered after the instructions.
Experimenter	Identifies sessions conducted by Giacomo Degli Antoni (others were conducted in parallel by Gianluca Grimalda).
Years	Number of years for which a subject has been an association member divided by subject's age. Note that this variable differs from 0 for non-members due to dropouts' engagement with associations in the past.
Hours	Weekly number of hours that subjects spend in association activities.
Number	Number of associations of which a subject was a member at the time of the research
Trust	Answer to the standard GSS trust question "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?" 1 identifies answer to option "Most people can be trusted".

All other variables are self-explanatory

TABLE S3: DESCRIPTIVE STATISTICS PER ASSOCIATION AND TYPE OF ASSOCIATION: SENDING RATES

Association	CA1		CA2		CA3		CA4		Cultural Associations	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.64	0.57	0.90	0.60	0.50	0.43	0.59	0.64	0.60	0.57
Median	0.60	0.60	0.90	0.60	0.50	0.40	0.60	0.60	0.60	0.60
St. Dev.	0.24	0.21	0.14	0.22	0.25	0.20	0.23	0.26	0.24	0.24
Obs.	9	7	2	9	10	8	25	14	46	38
Association	SW1		SW2		SW3		SW4		Social Welfare	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.71	0.67	0.55	0.59	0.64	0.53	0.36	0.83	0.61	0.62
Median	0.80	0.60	0.40	0.60	0.60	0.60	0.20	0.90	0.60	0.60
St. Dev.	0.26	0.27	0.25	0.14	0.28	0.30	0.26	0.20	0.28	0.22
Obs.	17	6	11	20	17	9	5	6	50	41

Association	TU1		TU2		Trade Unions		Other Associations	All Associations		Non-Members
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	Out-group	In-group	Out-group
Mean	0.57	0.66	0.51	0.55	0.56	0.63	0.44	0,58	0,61	0.42
Median	0.60	0.60	0.60	0.40	0.60	0.60	0.60	0,6	0,6	0.40
St. Dev.	0.25	0.29	0.29	0.23	0.26	0.27	0.22	0,26	0,24	0.28
Obs.	36	22	11	8	47	30	11	154	109	111

TABLE S4A: DESCRIPTIVE STATISTICS PER ASSOCIATION AND TYPE OF ASSOCIATION: RETURN RATES (SENDING =0 TOKENS)

Association	CA1		CA2		CA3		CA4		Cultural Associations	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.27	0.27	0	0.07	0.22	0.10	0.08	0.08	0.14	0.12
Median	0	0.12	0	0	0.08	0	0	0	0	0
St. Dev.	0.36	0.37	0	0.10	0.32	0.21	0.23	0.13	0.28	0.21
Obs.	9	7	2	9	10	8	25	14	46	38
Association	SW1		SW2		SW3		SW4		Social Welfare	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.09	0.36	0.31	0.34	0.18	0.08	0.04	0.20	0.17	0.26
Median	0	0.20	0	0.40	0	0	0	0	0	0
St. Dev.	0.21	0.42	0.37	0.25	0.29	0.14	0.09	0.33	0.28	0.29
Obs.	17	6	11	20	17	9	5	6	50	41
Association	TU1		TU2		Trade Unions		Other Associations	All Associations		Non-Members
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	Out-group	In-group	Out-group
Mean	0.16	0.15	0.14	0.18	0.26	0.16	0.11	0.15	0.18	0.13
Median	0	0	0	0	0	0	0	0	0	0
St. Dev.	0.27	0.29	0.28	0.35	0.29	0.30	0.26	0.27	0.27	0.24
Obs.	36	22	11	8	47	30	11	154	109	111

TABLE S4B: DESCRIPTIVE STATISTICS PER ASSOCIATION AND TYPE OF ASSOCIATION: RETURN RATES (SENDING =5 TOKENS)

Association	CA1		CA2		CA3		CA4		Cultural Associations	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.30	0.20	0.14	0.21	0.29	0.36	0.23	0.19	0.25	0.24
Median	0.21	0.14	0.14	0.21	0.14	0.36	0.20	0.17	0.17	0.17
St. Dev.	0.28	0.16	0.12	0.08	0.23	0.23	0.19	0.05	0.21	0.15
Obs.	9	7	2	9	10	8	25	14	46	38
Association	SW1		SW2		SW3		SW4		Social Welfare	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.28	0.45	0.31	0.41	0.20	0.17	0.14	0.32	0.24	0.35
Median	0.29	0.29	0.29	0.43	0.14	0.14	0.14	0.18	0.21	0.29
St. Dev.	0.14	0.32	0.17	0.21	0.10	0.09	0.08	0.28	0.14	0.24
Obs.	17	6	11	20	17	9	5	6	50	41
Association	TU1		TU2		Trade Unions		Other Associations		All Associations	Non-Members
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	Out-group	In-group	Out-group
Mean	0.26	0.30	0.28	0.30	0.27	0.30	0.20	0.25	0.30	0.20
Median	0.18	0.21	0.14	0.29	0.14	0.23	0.17	0.21	0.22	0.14
St. Dev.	0.20	0.23	0.24	0.12	0.20	0.20	0.10	0.18	0.21	0.17
Obs.	36	22	11	8	47	30	11	154	108	111

TABLE S4C: DESCRIPTIVE STATISTICS PER ASSOCIATION AND TYPE OF ASSOCIATION: RETURN RATES (SENDING =10 TOKENS)

Association	CA1		CA2		CA3		CA4		Cultural Associations	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.31	0.22	0.22	0.28	0.33	0.44	0.36	0.28	0.34	0.31
Median	0.33	0.22	0.22	0.33	0.22	0.44	0.33	0.33	0.33	0.33
St. Dev.	0.15	0.11	0.16	0.10	0.25	0.18	0.24	0.10	0.22	0.14
Obs.	9	7	2	9	10	8	25	14	46	38
Association	SW1		SW2		SW3		SW4		Social Welfare	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.31	0.48	0.37	0.48	0.28	0.26	0.24	0.39	0.30	0.42
Median	0.33	0.33	0.33	0.50	0.22	0.27	0.29	0.33	0.33	0.33
St. Dev.	0.11	0.33	0.14	0.21	0.16	0.07	0.12	0.27	0.14	0.23
Obs.	17	6	11	20	17	9	5	6	50	41
Association	TU1		TU2		Trade Unions		Other Associations		All Associations	Non-Members
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	Out-group	In-group	Out-group
Mean	0.31	0.34	0.34	0.28	0.32	0.32	0.28	0.32	0.35	0.25
Median	0.33	0.33	0.33	0.28	0.33	0.33	0.27	0.33	0.33	0.22
St. Dev.	0.17	0.20	0.19	0.13	0.18	0.18	0.09	0.18	0.20	0.20
Obs.	36	22	11	8	47	30	11	154	108	111

TABLES4D: DESCRIPTIVE STATISTICS PER ASSOCIATION AND TYPE OF ASSOCIATION: RETURN RATES (SENDING =15 TOKENS)

Association	CA1		CA2		CA3		CA4		Cultural Associations	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.37	0.25	0.39	0.33	0.35	0.45	0.37	0.33	0.37	0.34
Median	0.36	0.27	0.39	0.36	0.32	0.45	0.36	0.36	0.36	0.36
St. Dev.	0.08	0.13	0.03	0.16	0.16	0.18	0.18	0.09	0.16	0.15
Obs.	9	7	2	9	10	8	25	14	46	38
Association	SW1		SW2		SW3		SW4		Social Welfare	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.38	0.48	0.42	0.48	0.35	0.29	0.25	0.45	0.37	0.43
Median	0.36	0.41	0.36	0.48	0.36	0.27	0.36	0.39	0.36	0.36
St. Dev.	0.14	0.34	0.14	0.20	0.22	0.09	0.15	0.24	0.17	0.22
Obs.	17	6	11	20	17	9	5	6	50	41
Association	TU1		TU2		Trade Unions		Other Associations	All Associations		Non-Members
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	Out-group	In-group	Out-group
Mean	0.35	0.37	0.36	0.35	0.35	0.37	0.35	0.36	0.38	0.28
Median	0.36	0.36	0.36	0.32	0.36	0.36	0.36	0.36	0.36	0.27
St. Dev.	0.18	0.19	0.20	0.25	0.18	0.20	0.12	0.17	0.19	0.20
Obs.	36	22	11	8	47	30	11	154	108	111

TABLE S4E: DESCRIPTIVE STATISTICS PER ASSOCIATION AND TYPE OF ASSOCIATION: RETURN RATES (SENDING =20 TOKENS)

Association	CA1		CA2		CA3		CA4		Cultural Associations	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.32	0.22	0.47	0.37	0.38	0.38	0.43	0.38	0.40	0.35
Median	0.38	0.23	0.47	0.38	0.31	0.42	0.46	0.46	0.38	0.38
St. Dev.	0.13	0.12	0.04	0.14	0.23	0.18	0.20	0.12	0.19	0.15
Obs.	9	7	2	9	10	8	25	14	46	38
Association	SW1		SW2		SW3		SW4		Social Welfare	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.42	0.56	0.45	0.47	0.38	0.31	0.29	0.48	0.40	0.45
Median	0.46	0.54	0.46	0.46	0.31	0.31	0.31	0.46	0.42	0.46
St. Dev.	0.14	0.31	0.16	0.21	0.21	0.15	0.14	0.25	0.17	0.22
Obs.	17	6	11	20	17	9	5	6	50	41
Association	TU1		TU2		Trade Unions		Other Associations	All Associations		Non-Members
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	Out-group	In-group	Out-group
Mean	0.42	0.41	0.36	0.38	0.40	0.40	0.39	0.40	0.40	0.29
Median	0.46	0.38	0.38	0.35	0.38	0.38	0.38	0.38	0.39	0.31
St. Dev.	0.17	0.21	0.13	0.30	0.16	0.23	0.15	0.17	0.21	0.21
Obs.	36	22	11	8	47	30	11	154	108	111

TABLE S4F: DESCRIPTIVE STATISTICS PER ASSOCIATION AND TYPE OF ASSOCIATION: RETURN RATES (SENDING =25 TOKENS)

Association	CA1		CA2		CA3		CA4		Cultural Associations	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.38	0.24	0.53	0.40	0.41	0.36	0.41	0.40	0.41	0.36
Median	0.40	0.27	0.53	0.47	0.33	0.43	0.40	0.40	0.40	0.33
St. Dev.	0.19	0.12	0	0.14	0.25	0.19	0.23	0.11	0.22	0.15
Obs.	9	7	2	9	10	8	25	14	46	38
Association	SW1		SW2		SW3		SW4		Social Welfare	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.42	0.54	0.35	0.51	0.40	0.31	0.29	0.50	0.39	0.47
Median	0.47	0.50	0.33	0.50	0.40	0.40	0.33	0.48	0.40	0.47
St. Dev.	0.17	0.34	0.15	0.22	0.22	0.17	0.15	0.26	0.18	0.25
Obs.	17	6	11	20	17	9	5	6	50	41
Association	TU1		TU2		Trade Unions		Other Associations		All Associations	Non-Members
	Out-group	In-group	Out-group	Out-group	Out-group	In-group	Out-group	Out-group	In-group	Out-group
Mean	0.41	0.45	0.38	0.40	0.40	0.43	0.40	0.40	0.42	0.31
Median	0.42	0.47	0.40	0.42	0.40	0.47	0.40	0.40	0.47	0.33
St. Dev.	0.19	0.21	0.14	0.35	0.18	0.25	0.15	0.19	0.22	0.22
Obs.	36	22	11	8	47	30	11	154	108	111

TABLE S4G: DESCRIPTIVE STATISTICS PER ASSOCIATION AND TYPE OF ASSOCIATION: RETURN RATES (AVERAGE ON SIX POSSIBLE TRANSFER RATES)

Association	CA1		CA2		CA3		CA4		Cultural Associations	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.32	0.23	0.29	0.28	0.33	0.35	0.31	0.26	0.32	0.28
Median	0.31	0.21	0.29	0.26	0.29	0.31	0.29	0.30	0.29	0.29
St. Dev.	0.09	0.08	0.03	0.09	0.22	0.13	0.18	0.10	0.17	0.11
Obs.	9	7	2	9	10	8	25	14	46	38
Association	SW1		SW2		SW3		SW4		Social Welfare	
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	In-group
Mean	0.32	0.48	0.37	0.45	0.30	0.24	0.21	0.39	0.31	0.40
Median	0.32	0.36	0.35	0.48	0.28	0.25	0.25	0.32	0.31	0.33
St. Dev.	0.12	0.32	0.14	0.16	0.16	0.07	0.11	0.26	0.14	0.21
Obs.	17	6	11	20	17	9	5	6	50	41
Association	TU1		TU2		Trade Unions		Other Associations	All Associations		Non-Members
	Out-group	In-group	Out-group	In-group	Out-group	In-group	Out-group	Out-group	In-group	Out-group
Mean	0.32	0.34	0.31	0.31	0.32	0.33	0.29	0.31	0.34	0.24
Median	0.29	0.32	0.28	0.30	0.29	0.32	0.27	0.29	0.32	0.22
St. Dev.	0.17	0.18	0.16	0.16	0.16	0.17	0.10	0.15	0.17	0.18
Obs.	36	22	11	8	47	30	11	154	109	111

TABLE S5: DESCRIPTIVE STATISTICS FOR VARIABLES USED IN FOLLOWING REGRESSIONS

	Mean	Std. Dev.	Max	Median	Min	N. Obs.
Non-members						
Sending rate	0.42	0.28	1	0.40	0	111
Return Rate (Tokens Sent=0)	0.13	0.24	1	0	0	111
Return Rate (Tokens Sent=5)	0.20	0.17	1	0.14	0	111
Return Rate (Tokens Sent=10)	0.25	0.20	1	0.22	0	111
Return Rate (Tokens Sent=15)	0.28	0.20	1	0.27	0	111
Return Rate (Tokens Sent=20)	0.29	0.21	1	0.31	0	111
Return Rate (Tokens Sent=25)	0.31	0.22	1	0.33	0	111
Dropout	0.31	0.46	1	0	0	111
Female	0.59	0.49	1	1	0	111
Age	45.60	13.12	74	47	21	109
Income Dissatisfaction	0.30	0.46	1	0	0	111
South	0.23	0.42	1	0	0	110
Inhabitants	0.59	0.49	1	1	0	106
Degree	0.34	0.47	1	0	0	110
High_School_Diploma	0.50	0.50	1	0.5	0	110
Retired	0.12	0.32	1	0	0	111
Unemployed	0.07	0.26	1	0	0	111
Family_Size	2.50	1.15	5	2	0	109
Unmarried	0.32	0.47	1	0	0	111
Only_Child	0.19	0.39	1	0	0	111
Believer	0.68	0.47	1	1	0	111
Attends_Rel_Serv.	0.33	0.47	1	0	0	111
Divorced	0.05	0.21	1	0	0	111
Health_Satisfaction	3.27	0.60	4	3	1	111
Financial_Risk	3.49	2.79	10	3	0	110
Errors	1.18	1.39	5	1	0	110
Experimenter	0.51	0.50	1	1	0	111
Years	0.07	0.13	0.45	0	0	108
Years (Number)	2.70	5.59	25	0	0	110
Hours	0.00	0.00	0	0	0	111
Number	0.00	0.00	0	0	0	111
Trust	0.29	0.46	1	0	0	107
Members						
Sending rate (both treatments)	0.59	0.25	1	0.6	0	263
Sending rate (Out-group)	0.58	0.26	1	0.6	0	154
Sending rate (In-group)	0.61	0.24	1	0.6	0	109
Return Rate (Tokens Sent=0)(both treatments)	0.16	0.27	1	0	0	263
Return Rate (Tokens Sent=0) (Out-group)	0.15	0.27	1	0	0	154
Return Rate (Tokens Sent=0)(In-group)	0.18	0.27	1	0	0	109
Return Rate (Tokens Sent=5)(both treatments)	0.27	0.19	1	0.21	0	262
Return Rate (Tokens Sent=5) (Out-group)	0.25	0.18	1	0.21	0	154
Return Rate (Tokens Sent=5)(In-group)	0.30	0.21	1	0.22	0	108
Return Rate (Tokens Sent=10)(both treatments)	0.33	0.18	1	0.33	0	262
Return Rate (Tokens Sent=10) (Out-group)	0.32	0.18	1	0.33	0	154
Return Rate (Tokens Sent=10)(In-group)	0.35	0.20	1	0.33	0	108

TABLE S5 (CONTINUED)

Return Rate (Tokens Sent=15)(both treatments)	0.37	0.18	1	0.36	0	262
Return Rate (Tokens Sent=15) (Out-group)	0.36	0.17	1	0.36	0	154
Return Rate (Tokens Sent=15)(In-group)	0.38	0.19	0.98	0.36	0	108
Return Rate (Tokens Sent=20)(both treatments)	0.40	0.19	1	0.38	0	262
Return Rate (Tokens Sent=20) (Out-group)	0.40	0.17	1	0.38	0	154
Return Rate (Tokens Sent=20)(In-group)	0.40	0.21	1	0.39	0	108
Return Rate (Tokens Sent=25)(both treatments)	0.41	0.20	1	0.40	0	262
Return Rate (Tokens Sent=25) (Out-group)	0.40	0.19	1	0.40	0	154
Return Rate (Tokens Sent=25)(In-group)	0.42	0.22	1	0.47	0	108
Dropout	0.00	0.00	0	0	0	263
Female	0.60	0.49	1	1	0	260
Age	48.20	14.04	79	49	19	260
Income Dissatisfaction	0.16	0.37	1	0	0	258
South	0.13	0.34	1	0	0	253
Inhabitants	0.53	0.50	1	1	0	259
Uni_Degree	0.31	0.46	1	0	0	252
High_School_Diploma	0.43	0.50	1	0	0	252
Retired	0.19	0.39	1	0	0	263
Unemployed	0.01	0.11	1	0	0	263
Family_Size	2.83	1.47	16	3	0	260
Unmarried	0.29	0.45	1	0	0	261
Only_Child	0.19	0.40	1	0	0	263
Believer	0.71	0.46	1	1	0	252
Attends_Rel_Serv.	0.49	0.50	1	0	0	260
Divorced	0.03	0.17	1	0	0	261
Health_Satisfaction	3.29	0.67	4	3	1	259
Financial_Risk	2.92	2.43	10	3	0	257
Errors	0.94	1.45	6	0	0	256
Experimenter	0.53	0.50	1	1	0	263
Years	0.32	0.21	1.0	0.3	0.0	252
Years (Number)	16.06	12.60	69.0	13.0	0.1	254
Hours	6.64	8.06	60	4	0	238
Number	2.03	1.42	14	2	1	262
Trust	0.41	0.49	1	0	0	260

.

TABLE S6: ANALYSIS OF SENDING RATES AND RETURN RATES: EFFECTS OF MEMBERSHIP AND TREATMENT

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Tokens Sent	Tokens Sent	Tokens Sent	Return Rate	Return Rate	Return Rate
Model:	Ordered Logit	Ordered Logit	Ordered Logit	Tobit	Tobit	Tobit
Member	1.015***			0.0834***		
	(0.275)			(0.0293)		
Member_Ing		1.399***			0.104***	
		(0.316)			(0.0335)	
Member_Out		0.796***			0.0716**	
		(0.297)			(0.0302)	
Association_1_Ing			0.567			-0.0696
			(0.612)			(0.0682)
Association_1_Out			1.594			0.0284
			(0.983)			(0.0573)
Association_2_Ing			1.078*			0.0220
			(0.582)			(0.0482)
Association_2_Out			3.260***			0.0109
			(1.006)			(0.0494)
Association_3_Ing			0.615			0.133*
			(0.480)			(0.0737)
Association_3_Out			0.595			0.118
			(0.677)			(0.0867)
Association_4_Ing			1.421**			0.0512
			(0.599)			(0.0394)
Association_4_Out			0.895*			0.0271
			(0.464)			(0.0408)
Association_5_Ing			1.712			0.322**
			(1.294)			(0.147)
Association_5_Out			1.607***			0.0731
			(0.606)			(0.0523)

TABLE S6 (CONTINUED)

Association_6_Ing			1.386***			0.173***
			(0.514)			(0.0654)
Association_6_Out			0.485			0.140**
			(0.562)			(0.0625)
Association_7_Ing			1.502*			0.100
			(0.822)			(0.0631)
Association_7_Out			1.608**			0.0926*
			(0.668)			(0.0499)
Association_8_Ing			2.636***			0.159
			(0.697)			(0.107)
Association_8_Out			-0.406			-0.107
			(1.300)			(0.0769)
Association_9_Ing			2.133***			0.0963*
			(0.570)			(0.0545)
Association_9_Out			0.607			0.0806*
			(0.470)			(0.0412)
Association_10_Ing			1.301			0.128
			(0.829)			(0.0816)
Association_10_Out			0.455			0.0760
			(0.868)			(0.0719)
Other_Associations			-0.223			0.0539
			(0.560)			(0.0512)
Dropout	-0.207	-0.228	-0.171	-0.00161	-0.00248	-0.00168
	(0.485)	(0.490)	(0.519)	(0.0438)	(0.0453)	(0.0451)
Female	-0.463*	-0.501**	-0.389	-0.0460*	-0.0478*	-0.0386
	(0.245)	(0.245)	(0.277)	(0.0252)	(0.0253)	(0.0260)
Age	0.127*	0.143**	0.135*	0.00415	0.00473	0.00757
	(0.0670)	(0.0691)	(0.0730)	(0.00560)	(0.00582)	(0.00590)
Age Squared	-0.00149**	-0.00165**	-0.00148*	-1.89e-05	-2.48e-05	-5.53e-05
	(0.000714)	(0.000736)	(0.000769)	(6.01e-05)	(6.25e-05)	(6.46e-05)

TABLE S6 (CONTINUED)

Income_Dissatisfaction	-0.697**	-0.676**	-0.512*	0.0104	0.0122	0.0143
	(0.294)	(0.295)	(0.309)	(0.0311)	(0.0316)	(0.0309)
South	-0.917***	-0.934***	-1.024***	-0.102***	-0.103***	-0.103***
	(0.345)	(0.348)	(0.386)	(0.0297)	(0.0313)	(0.0318)
Inhabitants	0.0536	0.0614	0.0360	0.00917	0.00941	0.0298
	(0.229)	(0.229)	(0.244)	(0.0207)	(0.0212)	(0.0237)
Uni_Degree	0.184	0.390	0.448	-0.0239	-0.0137	-0.0157
	(0.317)	(0.338)	(0.366)	(0.0308)	(0.0330)	(0.0371)
High_School_Diploma	-0.000190	0.156	0.280	-0.000575	0.00730	0.00367
	(0.269)	(0.285)	(0.314)	(0.0295)	(0.0305)	(0.0316)
Retired	0.297	0.316	0.299	-0.0768*	-0.0758*	-0.0761*
	(0.359)	(0.361)	(0.401)	(0.0416)	(0.0408)	(0.0445)
Unemployed	-1.084	-1.061	-1.012	0.0310	0.0334	0.0322
	(0.684)	(0.705)	(0.657)	(0.0614)	(0.0613)	(0.0613)
Family_Size	-0.113	-0.120*	-0.111	-0.0143*	-0.0146*	-0.0104
	(0.0719)	(0.0724)	(0.0752)	(0.00813)	(0.00783)	(0.00752)
Unmarried	-0.455	-0.450	-0.508	-0.0352	-0.0346	-0.0255
	(0.331)	(0.342)	(0.386)	(0.0252)	(0.0259)	(0.0292)
Only_Child	-0.0286	-0.0586	-0.172	0.00470	0.00230	0.00231
	(0.286)	(0.279)	(0.317)	(0.0271)	(0.0258)	(0.0275)
Believer	-0.967***	-0.968***	-0.933***	-0.0409	-0.0402	-0.0423
	(0.332)	(0.327)	(0.341)	(0.0255)	(0.0255)	(0.0262)
Attends_Rel_Serv.	0.462	0.435	0.359	0.0401	0.0386	0.0362
	(0.297)	(0.293)	(0.304)	(0.0248)	(0.0246)	(0.0277)
Divorced	-0.226	-0.225	0.0468	-0.0116	-0.0126	0.0134
	(0.516)	(0.501)	(0.554)	(0.0949)	(0.0853)	(0.0911)
Health_Satisfaction	0.0392	0.0462	0.0522	0.0196	0.0200	0.0165
	(0.153)	(0.152)	(0.171)	(0.0176)	(0.0170)	(0.0184)
Financial_Risk	0.0885*	0.0982*	0.0802	-0.00454	-0.00413	-0.00732
	(0.0520)	(0.0532)	(0.0534)	(0.00547)	(0.00541)	(0.00548)

TABLE S6 (CONTINUED)

Errors	0.0198	0.0184	-0.0151	0.0203**	0.0201**	0.0153*
	(0.0755)	(0.0737)	(0.0789)	(0.00816)	(0.00822)	(0.00800)
Experimenter	0.423*	0.423*	0.314	0.0337	0.0332	0.0358
	(0.219)	(0.220)	(0.235)	(0.0210)	(0.0208)	(0.0225)
Sender_Transfer				0.0289***	0.0289***	0.0289***
				(0.00196)	(0.00207)	(0.00201)
Sender_Transfer_Square				-0.000689***	-0.000690***	-0.000689***
				(5.80e-05)	(6.26e-05)	(5.99e-05)
Constant	*Omitted*	*Omitted*	*Omitted*	-0.106	-0.128	-0.189
				(0.149)	(0.153)	(0.158)
Observations	320	320	320	1,920	1,920	1,920
Pseudo R^2	0.0764	0.0814	0.101			
chi2	88.11	93.84	116.2	418.7	424.9	486.0
sigma_e				0.148	0.148	0.148
sigma_u				0.163	0.163	0.155

Notes: An ordered logit model has been fitted to the analysis of the number of tokens sent by the sender (columns 1-3). The possible levels of the dependent variable are all multiple of 5 from 0 to 25. Constants and cutoff points have not been reported. Standard errors reported in brackets are robust to heteroschedasticity. A Tobit model has been fitted to the receiver's return rate in models in columns 4-6. The censoring values are 0 (lower limit) and the total possible amount which the receiver may have returned (upper limit). Bootstrapped standard errors (generated in 1000 repetitions) are reported in parenthesis. "Member_Ing" ("Member_Out") identifies members who participated in the ingroup (outgroup) treatment. "Association_a_b", a={1..10}, b={Ing, Out} identifies association from which members were recruited, and whether they participated in the ingroup or the outgroup treatment. "Other_Associations" identify association members recruited by Demoskopea (see SOM: Section IV). Sender_Transfer is the amount sent by the sender. Sender_Transfer_Square is the square value of the amount sent by the sender. ***: p<0.01, **: p<0.05, *: p<0.1.

TABLE S6BIS: MARGINAL EFFECTS FOR RELEVANT COVARIATES – REGRESSION TABLE S6 COLUMN 2

Outcomes	0	5	10	15	20	25
Member_Ing	-0.044***	-0.093***	-0.174***	0.017	0.139***	0.154***
	(0.013)	(0.023)	(0.038)	(0.023)	(0.033)	(0.045)
Member_Out	-0.030**	-0.061***	-0.099***	0.037**	0.082**	0.071**
	(0.013)	(0.023)	(0.037)	(0.017)	(0.032)	(0.029)
Gender	0.019**	0.039**	0.063*	-	-0.052*	-0.044*
	(0.009)	(0.019)	(0.032)	0.025**(0.013)	(0.027)	(0.023)
Age	-0.006*	-0.012*	-0.018**	0.008*	0.015**	0.012**
	(0.003)	(0.006)	(0.009)	(0.005)	(0.007)	(0.006)
Age Squared	0.000**	0.000**	0.000**	0.000*	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Income_Dissatisfaction	0.033*	0.061**	0.073**	-0.054*	-0.065**	-0.048**
	(0.018)	(0.030)	(0.028)	(0.030)	(0.026)	(0.020)
South	0.051*	0.090**	0.089***	-0.083**	-0.085***	-0.061***
	(0.028)	(0.039)	(0.024)	(0.041)	(0.028)	(0.018)
Family_unit	0.005	0.010	0.015	-0.007	-0.012	-0.010*
	(0.003)	(0.006)	(0.009)	(0.005)	(0.008)	(0.006)
Believer	0.034***	0.070***	0.122***	-0.031*	-0.100***	-0.095**
	(0.011)	(0.023)	(0.043)	(0.016)	(0.035)	(0.038)
Financial_Risk	-0.004*	-0.008*	-0.012*	0.006	0.010*	0.008*
	(0.002)	(0.004)	(0.007)	(0.004)	(0.005)	(0.005)
Experimenter	-0.017*	-0.034*	-0.052*	0.025*	0.043*	0.035*
	(0.010)	(0.019)	(0.027)	(0.015)	(0.023)	(0.018)

Notes: Marginal effects have been computed keeping all other variables at their mean level. Standard error of marginal effects reported in parenthesis; *** p<0.01, ** p<0.05, * p<0.1

TABLE S7: ANALYSIS OF TOKENS SENT AND RETURN RATES: EFFECTS OF LENGTH OF MEMBERSHIP

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Tokens sent	Tokens sent	Tokens sent	Return rate	Return rate	Return rate
Model:	Ordered logit	Ordered logit	Ordered logit	Tobit	Tobit	Tobit
Years_Dummy	1.061***		0.955**	0.114***		0.130**
	(0.334)		(0.481)	(0.0366)		(0.0584)
Years	-0.239			-0.0979		
	(0.624)			(0.0702)		
Years_Dummy_Out		0.923**			0.123***	
		(0.402)			(0.0406)	
Years_Dummy_Ing		1.344***			0.0975**	
		(0.421)			(0.0461)	
Years_X_Out		-0.508			-0.164*	
		(0.864)			(0.0866)	
Years_X_Ing		0.0843			0.00829	
		(0.905)			(0.105)	
Years_2			0.246			-0.0238
			(0.533)			(0.0597)
Years_3			-0.143			-0.0437
			(0.481)			(0.0580)
Years_4			0.0927			-0.0682
			(0.462)			(0.0558)
Dropout	-1.244***	-1.068**	-1.204***	-0.101**	-0.0964**	-0.100**
	(0.445)	(0.462)	(0.434)	(0.0397)	(0.0429)	(0.0414)
Female	-0.481*	-0.516**	-0.462*	-0.0582**	-0.0592**	-0.0589**
	(0.247)	(0.247)	(0.251)	(0.0238)	(0.0240)	(0.0241)
Age	0.123*	0.139**	0.121*	0.00438	0.00517	0.00478
	(0.0667)	(0.0689)	(0.0668)	(0.00580)	(0.00572)	(0.00588)
Age Squared	-0.00145**	-0.00161**	-0.00143**	-1.93e-05	-2.70e-05	-2.38e-05
	(0.000714)	(0.000736)	(0.000713)	(6.25e-05)	(6.21e-05)	(6.40e-05)
Income_Dissatisfaction	-0.639**	-0.628**	-0.600**	0.0115	0.0109	0.00825
	(0.296)	(0.298)	(0.299)	(0.0321)	(0.0338)	(0.0317)

TABLE S7 (CONTINUED)

South	-0.923***	-0.924***	-0.921***	-0.109***	-0.107***	-0.108***
	(0.352)	(0.353)	(0.354)	(0.0322)	(0.0315)	(0.0326)
Inhabitants	0.0600	0.0704	0.0398	0.0153	0.0148	0.0155
	(0.231)	(0.230)	(0.232)	(0.0217)	(0.0217)	(0.0216)
Uni_Degree	0.212	0.418	0.199	-0.0186	-0.0110	-0.0187
	(0.317)	(0.341)	(0.323)	(0.0334)	(0.0358)	(0.0323)
High_School_Diploma	0.0214	0.168	0.0390	0.00528	0.00809	0.00645
	(0.276)	(0.295)	(0.284)	(0.0311)	(0.0316)	(0.0312)
Retired	0.335	0.352	0.332	-0.0704*	-0.0662	-0.0722*
	(0.369)	(0.377)	(0.374)	(0.0423)	(0.0427)	(0.0427)
Unemployed	-1.087	-1.079	-1.038	0.0229	0.0212	0.0196
	(0.670)	(0.681)	(0.678)	(0.0606)	(0.0614)	(0.0599)
Family_Size	-0.114	-0.121*	-0.121	-0.0155**	-0.0158**	-0.0155*
	(0.0724)	(0.0722)	(0.0743)	(0.00791)	(0.00792)	(0.00840)
Unmarried	-0.516	-0.499	-0.543	-0.0363	-0.0330	-0.0339
	(0.342)	(0.353)	(0.348)	(0.0269)	(0.0266)	(0.0273)
Only_Child	-0.0424	-0.0871	-0.0337	-0.00256	-0.00798	-0.00452
	(0.284)	(0.285)	(0.290)	(0.0279)	(0.0276)	(0.0284)
Believer	-0.994***	-1.006***	-0.984***	-0.0526**	-0.0518**	-0.0545**
	(0.347)	(0.343)	(0.345)	(0.0251)	(0.0258)	(0.0274)
Attends_Rel_Serv.	0.484	0.461	0.453	0.0505**	0.0484*	0.0498*
	(0.309)	(0.303)	(0.303)	(0.0246)	(0.0258)	(0.0264)
Divorced	-0.219	-0.233	-0.225	-0.0109	-0.0139	-0.00835
	(0.513)	(0.495)	(0.519)	(0.0901)	(0.0879)	(0.0894)
Health_Satisfaction	0.0488	0.0381	0.0626	0.0232	0.0210	0.0236
	(0.158)	(0.158)	(0.160)	(0.0172)	(0.0176)	(0.0179)
Financial_Risk	0.0927*	0.101*	0.0880*	-0.00392	-0.00389	-0.00461
	(0.0523)	(0.0533)	(0.0525)	(0.00533)	(0.00523)	(0.00533)
Errors	-0.00175	-0.00321	0.000440	0.0186**	0.0180**	0.0187**
	(0.0776)	(0.0755)	(0.0788)	(0.00884)	(0.00894)	(0.00889)

TABLE S7 (CONTINUED)

Experimenter	0.434**	0.432**	0.442**	0.0360*	0.0350	0.0357*
	(0.218)	(0.219)	(0.220)	(0.0211)	(0.0214)	(0.0211)
Sender_Transfer				0.0295***	0.0295***	0.0295***
				(0.00191)	(0.00191)	(0.00197)
Sender_Transfer_Square				-0.000703***	-0.000703***	-0.000703***
				(5.80e-05)	(5.79e-05)	(5.90e-05)
Constant	*Constants omitted*	*Constants omitted*	*Constants omitted*	-0.125	-0.138	-0.129
				(0.154)	(0.154)	(0.158)
Observations	312	312	312	1,872	1,872	1,872
Pseudo R2	0.0761	0.0815	0.0771			
chi2	87.56	93.95	89.76	494.6	499.3	447.2
sigma_e				0.143	0.143	0.143
sigma_u				0.165	0.164	0.164

Notes: See Table S6 for the description of econometric models. All "Dummy" variables being used in this regression attributes a value of 1 when the related variable is greater than 0, and the value of 0 when the variable is equal to 0. For example, $Years\_Dummy = \begin{cases} 1 \; if \; Years > 0 \\ 0 \; if \; Years = 0 \end{cases}$.

In our notation, the "X" operator defines an interaction term between the two variables specified before and after the "X". So, the variables Years_X_Out (Years_X_Ing) are interaction variables given by the product of "Years" and the "Outgroup" ("Ingroup") dummy. Our econometric specification combines a dummy variable associated with a certain variable (for instance, "Years_Dummy"), and the variable itself (for instance, "Years"). In this way, the dummy variable captures the effect of having zero (as opposed to a positive) level of the variable, while the variable itself captures the effect of its increase along its positive range. Since "never-members" always have a value of zero for the "intensity" variables we consider ("Years", "Hours", "Number"), this specification is appropriate in order to distinguish between the effect of pure participation and the effect of increase in intensity among "members". "Years_2", "Years_3", "Years_4" are dummy variables identifying (with the value of 1) subjects who have been members of some associations for a portion of their life less than the 20% percentile, between the 20% percentile and the 40% percentile, between the 40% percentile and the 60% percentile, respectively, of the variable "Years". Alternative specifications of membership lengths have been tested in Degli Antoni and Grimalda (2013) with qualitatively similar results to those presented here.

TABLE S8: ANALYSIS OF TOKENS SENT: EFFECTS OF LENGTH OF HOURS SPENT IN ASSOCIATION PER WEEK

Dependent Variable: Tokens sent	(1)	(2)	(3)	(4)
Hours_Dummy	1.227***			
	(0.298)			
Hours	-0.0121			
	(0.0201)			
Hours_Dummy_Out		1.328***		
		(0.356)		
Hours_Dummy_Ing		1.422***		
		(0.349)		
Hours_X_Out		-0.0791***		
		(0.0292)		
Hours_X_Ing		0.0210*		
		(0.0125)		
Hours_CA_Dummy_Out			3.365***	0.371
			(1.201)	(1.809)
Hours_CA_Dummy_Ing			0.649	
			(0.563)	
Hours_SWA_Dummy_Out			1.729**	-0.667
			(0.694)	(1.439)
Hours_SWA_Dummy_Ing			1.387***	
			(0.494)	
Hours_TU_Dummy_Out			1.959***	0.000961
			(0.579)	(0.998)
Hours_TU_Dummy_Ing			2.119***	
			(0.754)	
Hours_ CA_X_Out			-0.330**	-0.341*
			(0.147)	(0.206)
Hours_ CA_X_Ing			0.0507	
			(0.0388)	

TABLE S8 (CONTINUED)

Hours_SWA_X_Out			-0.0765	-0.0695
			(0.0692)	(0.0855)
Hours_SWA_X_Ing			0.00928	
			(0.0184)	
Hours_ TU_X_Out			-0.179***	-0.243**
			(0.0396)	(0.109)
Hours_ TU_X_Ing			0.0137	
			(0.0261)	
Hours_Dummy_SWA_X_Ing				-0.838
				(0.950)
Hours_Dummy_ CA_X_Ing				-15.78***
				(2.045)
Hours_Dummy_ TU_X_Ing				0.696
				(1.246)
Hours_Ingroup_X_SWA				-0.00125
				(0.00164)
Hours_Ingroup_X_CA				0.0969***
				(0.00971)
Hours_Ingroup_X_TU				-0.0115
				(0.0115)
Member				2.400**
				(0.945)
Other_Associations	-1.333**			
	(0.526)			
Dropout	-0.152	-0.127	0.0595	0.0598
	(0.487)	(0.497)	(0.532)	(0.557)
Female	-0.502**	-0.536**	-0.0924	-0.151
	(0.248)	(0.249)	(0.305)	(0.376)
Age	0.117*	0.146**	0.128*	0.104
	(0.0684)	(0.0706)	(0.0767)	(0.101)

TABLE S8 (CONTINUED)

Age Squared	-0.00139*	-0.00170**	-0.00133*	-0.000957
	(0.000745)	(0.000762)	(0.000788)	(0.00104)
Income_Dissatisfaction	-0.601**	-0.581**	-0.172	0.0450
	(0.294)	(0.295)	(0.368)	(0.412)
South	-0.955***	-0.867**	-0.846*	-0.767
	(0.364)	(0.356)	(0.451)	(0.523)
Inhabitants	0.0586	0.158	0.314	0.167
	(0.233)	(0.239)	(0.315)	(0.352)
Uni_Degree	0.372	0.525	0.600	0.578
	(0.343)	(0.343)	(0.443)	(0.483)
High_School_Diploma	0.138	0.265	0.376	0.151
	(0.283)	(0.288)	(0.361)	(0.424)
Retired	0.379	0.648*	0.574	0.324
	(0.388)	(0.392)	(0.477)	(0.568)
Unemployed	-1.083*	-1.087	-0.853	-1.483**
	(0.635)	(0.666)	(0.627)	(0.733)
Family_Size	-0.138*	-0.164**	-0.0895	0.0467
	(0.0721)	(0.0713)	(0.0901)	(0.191)
Unmarried	-0.665*	-0.597*	-0.791*	-0.747
	(0.340)	(0.346)	(0.423)	(0.495)
Only_Child	-0.134	-0.125	-0.163	0.0722
	(0.297)	(0.295)	(0.324)	(0.386)
Believer	-1.041***	-1.099***	-1.117***	-1.350***
	(0.328)	(0.334)	(0.426)	(0.479)
Attends_Rel_Serv.	0.558*	0.513*	0.447	0.741*
	(0.297)	(0.299)	(0.386)	(0.429)
Divorced	-0.106	-0.308	-0.628	-0.824
	(0.614)	(0.549)	(0.610)	(0.711)
Health_Satisfaction	0.0629	0.120	0.274	0.220
	(0.163)	(0.165)	(0.224)	(0.238)

TABLE S8 (CONTINUED)

Financial_Risk	0.0771	0.0987*	0.0480	0.0920
	(0.0511)	(0.0532)	(0.0631)	(0.0771)
Errors	0.0293	0.0299	-0.0507	0.0357
	(0.0772)	(0.0739)	(0.107)	(0.132)
Experimenter	0.420*	0.431*	0.375	0.307
	(0.224)	(0.227)	(0.289)	(0.337)
Observations	303	303	209	168
Pseudo R2	0.0868	0.0959	0.110	0.128
chi2	94.69	118.6	122.1	.

Notes: See Table S6 for the description of econometric models.. Dummy variables and interaction variables have the same notation used in Table S6 and Table S7. For example, $Hours\_Dummy = \begin{cases} 1 \; if \; Hours > 0 \\ 0 \; if \; Hours = 0 \end{cases}$. In our notation, the "X" operator defines an interaction term between the two variables specified before and after the "X". Accordingly, the variables "Hours_X_Out" ("Hours_X_Ing") are interaction variables given by the product of "Hours" and the "Outgroup" ("Ingroup") dummy. The variables "Hours_ CA_X_Out" ("Hours_ CA_X_Ing") are interaction variables given by the product of "Hours" and the "Outgroup" ("Ingroup") dummy for a participant recruited from a cultural association. Similarly, "Hours_SWA_X_Out" ("Hours_SWA_X_Ing") are interaction variables given by the product of "Hours" and the "Outgroup" ("Ingroup") dummy for a participant recruited from a Social Welfare and Health Services association. "Hours_TU_X_Out" ("Hours_TU_X_Ing") are interaction variables given by the product of "Hours" and the "Outgroup" ("Ingroup") dummy for a participant recruited from a Social Trade Union association. See Table S7 for a comment on the econometric specification being used. "Other_Associations" identify association members recruited by Demoskopea (see SOM: Section IV). Regression in columns 3 to 5 aim at studying differential effects of "Hours" for the three different types of associations we selected (see SOM: Section IV for a description of our sampling strategy). For that purpose we restricts observations to subjects who were members of strictly one association group between cultural, trade union or social welfare and health services. Regression in column 4 replaces "Hours" - which is the total number of hours an individual spends in *all* associations of which she is a member - with the amount of hours actually spent in the association that is relevant for the ingroup treatment. This change is applied to subjects participating in the ingroup treatment only. This offers a more precise measure of the level of involvement with the association from which the individual has been recruited, at the cost of a drop in the number of observations because the relative question was not included in the questionnaire in the two initial sessions. Other specifications (not reported; see Degli Antoni and Grimalda 2013) controlling for multiple memberships give the same qualitative results.

TABLE S9: ANALYSIS OF RETURN RATE: EFFECTS OF LENGTH OF HOURS SPENT IN ASSOCIATION PER WEEK

	(1)	(2)	(3)	(4)
Dependent variable: Return rate				
Hours_Dummy	0.0937***			
	(0.0305)			
Hours	-0.000765			
	(0.00190)			
Hours_Dummy_Out		0.0985***		
		(0.0336)		
Hours_Dummy_Ing		0.101***		
		(0.0356)		
Hours_Out		-0.00350		
		(0.00331)		
Hours__Ing		0.00109		
		(0.00205)		
Hours_CA_Dummy_Out			0.0889	-0.167
			(0.0835)	(0.242)
Hours_CA_Dummy_Ing			0.0899	
			(0.142)	
Hours_SWA_Dummy_Out			0.127**	-0.103
			(0.0594)	(0.0961)
Hours_SWA_Dummy_Ing			0.111*	
			(0.0646)	
Hours_TU_Dummy_Out			0.193***	-0.0557
			(0.0729)	(0.115)
Hours_TU_Dummy_Ing			0.187	
			(0.154)	
Hours_CA_Out			-0.00471	-0.00674
			(0.0163)	(0.0495)
Hours_CA_Ing			0.000779	
			(0.0285)	
Hours_SWA_Out			-0.00729	-0.00533
			(0.00617)	(0.00699)
Hours_SWA_Ing			0.00131	
			(0.00754)	
Hours_TU_Out			-0.0145	0.000515
			(0.0193)	(0.0226)
Hours_TU_Ing			-0.00202	
			(0.0423)	
Hours_Dummy_SWA_Ing				-0.0529
				(0.175)
Hours_Dummy_CA_Ing				0.122
				(0.225)
Hours_Dummy_TU_Ing				-0.0976
				(0.247)
Hours_SWA_Ing				-0.000346
				(0.0103)

TABLE S9 (CONTINUED)

Hours_CA_Ing				-0.000957
				(0.000800)
Hours_TU_Ing				0.00105
				(0.00215)
Member				0.195**
				(0.0916)
Dropout	0.00395	0.00537	0.00375	-0.0104
	(0.0463)	(0.0452)	(0.0479)	(0.0513)
Female	-0.0420*	-0.0423*	-0.00665	-0.0263
	(0.0239)	(0.0252)	(0.0330)	(0.0399)
Age	0.00377	0.00498	0.00414	0.00119
	(0.00577)	(0.00582)	(0.00831)	(0.0111)
Age Squared	-1.31e-05	-2.59e-05	-4.69e-06	3.26e-05
	(6.40e-05)	(6.39e-05)	(9.19e-05)	(0.000126)
Income_Dissatisfaction	0.0127	0.0153	0.0392	0.0491
	(0.0326)	(0.0309)	(0.0434)	(0.0468)
South	-0.114***	-0.111***	-0.145***	-0.154***
	(0.0321)	(0.0299)	(0.0441)	(0.0530)
Inhabitants	0.0185	0.0232	0.0317	0.0259
	(0.0206)	(0.0209)	(0.0313)	(0.0397)
Uni_Degree	-0.0165	-0.00679	0.0468	0.0726
	(0.0346)	(0.0352)	(0.0499)	(0.0601)
High_School_Diploma	0.00346	0.0105	0.0329	0.0553
	(0.0311)	(0.0314)	(0.0411)	(0.0513)
Retired	-0.0508	-0.0390	-0.0563	-0.143
	(0.0435)	(0.0420)	(0.0648)	(0.103)
Unemployed	0.0327	0.0346	0.0250	-0.0200
	(0.0601)	(0.0590)	(0.0791)	(0.0810)
Family_Size	-0.0155*	-0.0163**	-0.0124	-0.0264
	(0.00856)	(0.00814)	(0.0122)	(0.0179)
Unmarried	-0.0375	-0.0346	-0.0341	-0.0364
	(0.0278)	(0.0266)	(0.0347)	(0.0423)
Only_Child	0.00167	0.00113	0.00992	0.0295
	(0.0286)	(0.0279)	(0.0348)	(0.0424)
Believer	-0.0456*	-0.0462*	-0.0549	-0.0589
	(0.0263)	(0.0265)	(0.0377)	(0.0438)
Attends_Rel_Serv.	0.0344	0.0312	0.00957	1.28e-05
	(0.0261)	(0.0256)	(0.0392)	(0.0487)
Divorced	-0.0560	-0.0589	-0.0329	0.00765
	(0.0979)	(0.0956)	(0.162)	(0.154)
Health_Satisfaction	0.0274	0.0301	0.0224	0.0163
	(0.0188)	(0.0189)	(0.0267)	(0.0330)
Financial_Risk	-0.00481	-0.00394	-0.00585	-0.00896
	(0.00543)	(0.00554)	(0.00754)	(0.00716)
Errors	0.0203**	0.0205**	0.0157	0.0213
	(0.00857)	(0.00800)	(0.0113)	(0.0147)
Experimenter	0.0256	0.0253	0.0244	0.0415
	(0.0221)	(0.0222)	(0.0314)	(0.0303)

TABLE S9 (CONTINUED)

Other_Associations	-0.0341			
	(0.0455)			
Sender_Transfer	0.0287***	0.0287***	0.0270***	0.0278***
	(0.00184)	(0.00191)	(0.00229)	(0.00232)
Sender_Transfer_Square	-0.000671***	-0.000671***	-0.000651***	-0.000688***
	(5.46e-05)	(5.72e-05)	(6.94e-05)	(7.23e-05)
Constant	-0.127	-0.175	-0.182	-0.0682
	(0.156)	(0.155)	(0.221)	(0.276)
Observations	1,818	1,818	1,254	1,008
sigma_e	0.137	0.137	0.137	0.129
sigma_u	0.165	0.164	0.173	0.170
chi2	468.3	491.2	314.1	2.200e+07

Notes: See Table S6 for the description of econometric models. See Table S8 for the description of Dummy variables and interaction variables and for a comment on the econometric specification being used. Regressions in columns 3-4 reproduce for receivers those fitted for senders in Table S8. See Table S8 for an explanation. Other specifications (not reported; see Degli Antoni and Grimalda 2013) controlling for multiple memberships give the same qualitative results.

TABLE S10: ANALYSIS OF TOKENS SENT: EFFECTS OF NUMBER OF JOINED ASSOCIATIONS

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	Tokens Sent	Tokens Sent	Tokens Sent	Return Rate	Return Rate	Return Rate
Model:	Ordered Logit	Ordered Logit	Ordered Logit	Tobit	Tobit	Tobit
Number_Dummy	0.921***			0.0786**		
	(0.325)			(0.0353)		
Number	0.0500			0.00248		
	(0.0823)			(0.00930)		
Number_Dummy_X_Out		0.821**			0.0761*	
		(0.381)			(0.0398)	
Number_Dummy_X_Ing		1.197***			0.0931**	
		(0.407)			(0.0437)	
Number_X_Out		-0.00608			-0.00211	
		(0.103)			(0.0112)	
Number_X_Ing		0.0975			0.00506	
		(0.140)			(0.0144)	
Number_1			1.036***			0.0823**
			(0.308)			(0.0335)
Number_2			1.011***			0.0846***
			(0.298)			(0.0313)
Dropout	-0.203	-0.220	-0.206	-0.00154	-0.00213	-0.00155
	(0.484)	(0.489)	(0.484)	(0.0436)	(0.0452)	(0.0454)
Female	-0.467*	-0.497**	-0.473*	-0.0459*	-0.0472*	-0.0461**
	(0.244)	(0.244)	(0.247)	(0.0246)	(0.0247)	(0.0233)
Age	0.125*	0.141**	0.127*	0.00409	0.00462	0.00414
	(0.0669)	(0.0686)	(0.0670)	(0.00579)	(0.00582)	(0.00599)
Age Squared	-0.00147**	-0.00163**	-0.00148**	-1.84e-05	-2.35e-05	-1.89e-05
	(0.000714)	(0.000730)	(0.000714)	(6.18e-05)	(6.29e-05)	(6.49e-05)

TABLE S10 (CONTINUED)

Income_Dissatisfaction	-0.673**	-0.652**	-0.676**	0.0108	0.0129	0.0106
	(0.298)	(0.298)	(0.296)	(0.0312)	(0.0320)	(0.0301)
South	-0.930***	-0.926***	-0.926***	-0.103***	-0.102***	-0.103***
	(0.350)	(0.353)	(0.346)	(0.0306)	(0.0320)	(0.0312)
Inhabitants	0.0646	0.0787	0.0579	0.00934	0.0101	0.00944
	(0.231)	(0.232)	(0.235)	(0.0204)	(0.0217)	(0.0209)
Uni_Degree	0.174	0.377	0.197	-0.0247	-0.0145	-0.0243
	(0.317)	(0.336)	(0.322)	(0.0318)	(0.0342)	(0.0312)
High_School_Diploma	0.00790	0.150	0.0173	-0.000624	0.00633	-0.000570
	(0.273)	(0.287)	(0.276)	(0.0293)	(0.0328)	(0.0296)
Retired	0.288	0.314	0.296	-0.0770*	-0.0760*	-0.0766*
	(0.362)	(0.363)	(0.360)	(0.0405)	(0.0404)	(0.0430)
Unemployed	-1.082	-1.052	-1.088	0.0314	0.0337	0.0313
	(0.686)	(0.703)	(0.680)	(0.0601)	(0.0600)	(0.0601)
Family_Size	-0.111	-0.114	-0.113	-0.0142*	-0.0143*	-0.0143*
	(0.0717)	(0.0722)	(0.0719)	(0.00809)	(0.00798)	(0.00824)
Unmarried	-0.469	-0.464	-0.463	-0.0357	-0.0349	-0.0355
	(0.331)	(0.342)	(0.332)	(0.0262)	(0.0256)	(0.0267)
Only_Child	-0.0343	-0.0572	-0.0304	0.00428	0.00254	0.00453
	(0.284)	(0.275)	(0.285)	(0.0274)	(0.0273)	(0.0276)
Believer	-0.935***	-0.950***	-0.954***	-0.0397	-0.0400	-0.0404
	(0.332)	(0.327)	(0.331)	(0.0251)	(0.0255)	(0.0249)
Attends_Rel_Serv.	0.430	0.416	0.451	0.0388	0.0383	0.0396
	(0.296)	(0.293)	(0.297)	(0.0257)	(0.0256)	(0.0252)
Divorced	-0.203	-0.225	-0.223	-0.0107	-0.0133	-0.0115
	(0.512)	(0.498)	(0.515)	(0.0898)	(0.0925)	(0.0886)
Health_Satisfaction	0.0375	0.0428	0.0380	0.0194	0.0196	0.0196
	(0.153)	(0.151)	(0.153)	(0.0173)	(0.0166)	(0.0173)
Financial_Risk	0.0851	0.0966*	0.0876*	-0.00462	-0.00412	-0.00459
	(0.0527)	(0.0538)	(0.0528)	(0.00540)	(0.00549)	(0.00559)

TABLE S10 (CONTINUED)

Errors	0.0188	0.0198	0.0203	0.0203**	0.0203**	0.0203**
	(0.0751)	(0.0735)	(0.0757)	(0.00829)	(0.00812)	(0.00823)
Experimenter	0.423*	0.414*	0.418*	0.0338	0.0327	0.0336
	(0.219)	(0.221)	(0.218)	(0.0210)	(0.0210)	(0.0207)
Sender_Transfer				0.0288***	0.0288***	0.0288***
				(0.00191)	(0.00198)	(0.00202)
Sender_Transfer_Square				-0.000688***	-0.000688***	-0.000688***
				(5.71e-05)	(5.87e-05)	(6.08e-05)
Constant	*Constants omitted*	*Constants omitted*	*Constants omitted*	-0.103	-0.125	-0.105
				(0.153)	(0.157)	(0.160)
Observations	319	319	319	1,914	1,914	1,914
Pseudo R2	0.0764	0.0815	0.0762			
chi2	87.80	93.33	88.89	0.148	0.148	0.148
sigma_e				0.163	0.163	0.163
sigma_u				433.2	438.4	440.0

Notes: See Table S6 for the description of econometric models. In analogy with the notation used in above Tables, $Number\_Dummy = \begin{cases} 1 \; if \; Number > 0 \\ 0 \; if \; Number = 0 \end{cases}$. The "X" operator defines an interaction term between the two variables specified before and after the "X". For instance, the variables "Number_X_Out" ("Number_X_Ing") are interaction variables given by the product of "Number" and the "Outgroup" ("Ingroup") dummy.Number_1 and Number_2 are defined as follows: $Number\_1 = \begin{cases} 1 \; if \; Number = 1 \\ 0 \; if \; Number = 0 \end{cases}$. $Number\_2 = \begin{cases} 1 \; if \; Number > 1 \\ 0 \; if \; Number = 0 \end{cases}$. In this way, the model in specification 3 enables us to compare the incremental effect of being associated with more than 1 association and exactly 1 association. This can be done through a Wald test on the null hypothesis that the coefficients associated with $Number_1$and $Number\_2$ are not significantly different from each other: $H_0 = \beta_{Number\_1} - \beta_{Number_0} = 0$. The test fails to reject the null hypothesis both for sending rates $\beta = -0.025; P = 0.921)$, and return rates $\beta = 0.0023; P = 0.926)$. We tested other specifications, varying the number of associations being considered, with equivalent results (see Degli Antoni and Grimalda 2013).

;

III. Description of associations

We recruited association members from ten associations, whose general goals, number of active members, encounter frequency, are described below.

A. Trade Unions

CGIL (Confederazione Generale Italiana del Lavoro – Italian General Confederation of Labour) and UIL (Unione Italiana del Lavoro – Italian Labour Union) are two of the most representative - in terms of number of members - Italian trade unions, CGIL being the largest one. They are structured into several different branches, each focussing on one specific sector of the economy. Our sample came from CGIL and UIL "delegates". These are employees who have been appointed to represent the trade union in the firm where they work. Delegates do not receive extra payment for their activities, so these can be considered akin to a voluntary activity. Meetings are regularly organised to discuss various issues related to industrial relations. CGIL delegates meet every month. UIL delegates meet less frequently, when specific issues need to be discussed. The number of delegates belonging to each branch may vary significantly. They range from 259 for the largest branch (FIOM, active in the metalworking sector) to 25 for the smallest one (SLC, active in the -insurance and credit sector) for CGIL active in Parma. Normally between 20 and 50 members (our estimates) attend such meetings. The number of delegates is significantly lower for UIL. For example, the delegates in the metalworking sector are 45 for UIL. Overall, we estimate the total number of delegates active in the province of Parma to be 1246 for CGIL and 224 for UIL. We recruited members from five different branches of CGIL and two branches for UIL.

B. Cultural associations

We recruited from three choirs (Corale Giuseppe Verdi, Coro Renata Tebaldi, and Coro "Voci di Parma") and one ethnic and traditional dance association (Terra di Danza - Land of Dance).

All the three choirs are formed by opera amateur singers who meet to practice mainly opera works under the direction of a choral conductor. All the three choirs also perform in public events. Choir members are not paid for their participation. The rehearsals are normally held once or twice a week. The choirs meet in the city of Parma. The Giuseppe Verdi choir counts about 75 singers, while the other choirs are smaller: The Renata Tebaldi choir counts on about 50 affiliates and the Voices of Parma choir has about 40 members.

Terra di Danza is active in the provinces of Parma and the neighbouring province of Reggio Emilia. We recruited people attending classes held in Parma. It is a voluntary association organising courses, stages and events in relation to different types of dances, such as Jewish, Celtic, and other ethnic dances. Classes are structured in three different levels: beginner, intermediate and advanced.

People can enrol in quarterly courses. Classes are held once a week and participants in a class may vary between a few people (less than ten) to some dozens (but normally no more than 35 people). Overall, we estimate that around 140 people are active members of this association.

C. Social welfare and health services associations

We recruited from four associations active in social health and services.

AVIS (Associazione Volontari Italiani Sangue – Italian Association of Blood Donors) is the main Italian association organising the collection of blood donation. It is structured in different branches that organise blood collection in various municipalities of the province of Parma. We recruited people from active volunteers, i.e. subjects who help in the organisation of AVIS associational activity in the province of Parma. These subjects meet in the headquarters of their branch to organise the associational activities and blood collection. The frequency of the meetings varies in relation to the dimension and the type of activity carried out by each branch. The total number of active volunteers equals around 700 members throughout the province and 250 for the city of Parma and surroundings municipalities.

A.VO.PRO.RI.T (Associazione Volontaria Promozione Ricerca Tumori - Voluntary Association for the Promotion of Cancer Research) is an association active in the province of Parma since 1981. It promotes medical research on cancer, it offers assistance to people suffering from cancer, and it carries out several activities to raise people's awareness on cancer-related issues. Members usually meet every month to plan and organise the association's activity. The number of active members of A.VO.PRO.RI.T is around 300 people.

Giocamico (Friendly-play) is an association of volunteers founded in 1998. It is active in the area of the Parma, although two branches have been formed in two other Italian provinces (Bergamo and Sassari). Its goal is to assist hospitalised children. Volunteers spend their time in hospitals, carrying out various recreational activities with children such as playing, reading books, painting, etc. The main aim of Giocamico is to allow hospitalized children to continue to play. Members have regular monthly meetings at the association home. The number of volunteers is around 200.

Comunità di Sant'Egidio (Community of Saint Giles) is an association active nationwide dedicated to charitable activities and Catholic evangelisation. In Parma, the number of active volunteers belonging to the association equals 25 members, while 20 more people follow the association activities less regularly. Active members meet several times a month for worshipping and discussing associational activities. We recruited people from the more active group of 25 members.

IV. Sampling objectives and implementation

A. Rationale

Our general goals in the selection of association members were, on the one hand, to recruit members from a broad range of the association spectrum, and, on the other, to cluster recruitment into a limited number of association types in order to have sufficient power when conducting statistical and econometric analyses. We opted for sampling trade unions (TU), cultural associations (CA), and social welfare and health services associations (SWA). According to the classification proposed by Knack and Keefer (1997), TU and CA stand at the opposite extremes of a spectrum ranking associations on the basis of their rent-seeking orientation. TU are typical "Olsonian" associations, as their main goal is to extract benefits for their members through lobbying and bargaining activities at the societal level. Other Olsonian associations are "political parties or groups" and "professional associations". CA are typical "Putnamesque" associations, in that they are the least likely to seek benefits for their members from the society as a whole. "Religious or church organizations", "education, arts, music, activities"; and "youth work" are also Putnamesque. SWA lie in a residual intermediate category between Olsonian and Putnamesque. While the type of good "produced" is mainly private in TU – members are the principal beneficiaries from the association activity – and has both a private and a public aspect in CA – members can enjoy the specific activity carried out in the association, but CA also perform publicly, often for free – the good is primarily public for SWA, as their main goal is to improve the welfare of people affected by illnesses or being marginalised. We thought that this category would be particularly relevant to test the thesis that people transfer co-operative habits from within associations to outside associations. This should be particularly the case in associations that are created specifically to take care of others' welfare (Degli Antoni 2009; Degli Antoni and Sabatini 2013; Sabatini, Modena and Tortia, 2014). We then thought that restricting recruitment to these three association groups would ensure a broad variability in terms of the association objectives and type of good being produced.

Our recruitment strategy was to recruit all association members through personal announcements made by researchers prior to association meetings, while sub-contracting the recruitment of non-members to Demoskopea, one of the most well-known opinion polls and market research agency in Italy. The recruitment of association members at association meetings took place before the recruitment of non-members. Subjects who accepted to participate had to fill out a registration form requiring subjects to state their demographic characteristics and occupational status. In this way, the general demographic characteristics of the association sample were known before the recruitment of the non-member sample. We instructed Demoskopea to recruit a sample of non-members whose characteristics mirrored that of members with respect to gender, age, and education levels. More

precisely, the quotas we considered in recruitment were three age groups - [18-30; 31-50; 50+] -, three education levels - (1) Primary and Secondary School; (2) Maturità/Licenza - equivalent to A-levels; (3) Bachelor Degree, Master and Ph.D. -, and two gender groups. This originates an 18-cell matrix of possible demographic characteristics. We demanded Demoskopea to target the same number of people in each cell as the member sample, up to a tolerance level of a few units (about 10% of the target) for each cell. We deemed inappropriate to screen subjects over their income levels because of obvious confidentiality reasons. We also instructed Demoskopea to recruit two different types of non-members. The first comprised people reporting in the screening interview they had never been active members of an association (never-members). The second sub-group comprised people who had been active members in the past, but had ceased to be active members at the time of the research (dropouts). Our request was for about two thirds of the non-member group to be formed by never-members, and the remaining third by dropouts.

We selected associations from the list of non-profit associations active in the area of Parma compiled by Forum Solidarietà – Centro di Servizi per il Volontariato in Parma (2011) (Solidarity Forum-Service Centre for Volunteering in Parma). Our goal was to have a roughly equal representation of members active in the three types of associations identified from the outset, that is, cultural, social health and welfare, and trade unions.

Although several associations are active in each of these categories, rather than selecting at random the associations to invite, we selected associations that appeared most likely to maximise participation in the research. We set out to achieve a minimal recruitment target of 20 participants per association, to be evenly divided into in-group and out-group treatments. We thus selected associations that appeared to have a large enough number of active members, also taking into account the possibility of attrition rates –i.e. subjects declining to sign up for the research - and no-shows, i.e. subjects not turning up at the research session after having signed up. As can be noticed in the descriptive statistics reported in SOM: Section II, our concerns were well-founded because for some associations we failed to achieve the desired target, both because of no-shows and attrition. Hence, although our member sample was not randomly drawn from the relevant population, we believe that the practical difficulties in our field experiment were stringent enough to justify a recruitment strategy aiming at maximising participation.

After an association had been selected, Giacomo Degli Antoni (GDA) got in touch with one of the associations' co-ordinators. GDA explained in very general terms the goals of the research, demanding co-ordinators maximum confidentiality in not revealing to anyone the research general goals. If the co-ordinator agreed to be involved in the research, an appointment was made for GDA to attend an associational meeting and give an announcement of the research.

Within the constraints given by the quota sampling method described above, Demoskopea followed a recruitment strategy that combined selection from a non-random sample formed by people who already took part in its previous surveys, and contacting people randomly from the general population with the objective of filling up the various quotas of the sample as desired. It has to be noted that people who already participated in prior Demoskopea research had never participated in experiments. Rather, they had taken part in meetings such as focus groups for market research.

In practice, there have been some exceptions to this general strategy. Even if Demoskopea was instructed to only recruit non-members, 11 subjects recruited by Demoskopea reported in the post-experiment questionnaire that they were active association members at the time of the research. We suppose this may be due to subjects' absent-mindedness when answering the recruitment interview. We have kept these 11 subjects in the sample as members, although only for two of them do the associations of which they are member fall into the categories of cultural, or social welfare and health, or trade unions. In the descriptive statistics of Section II and in the ensuing econometric analysis we refer to these subjects as belonging to "Other associations". Overall, Demoskopea recruited 118 participants (including the 11 members). The remaining 256 participants were recruited by GDA and occasionally by Gianluca Grimalda (GG). These include 256 association members recruited at association meetings and four non-members recruited to make up for Demoskopea no-shows.

As customary for Demoskopea, its recruitment was carried out through phone calls. We requested Demoskopea recruiters to follow as closely as possible the announcements the researchers gave at the association meetings in their screening interviews. Both recruitment scripts are reported in Sections IV.B-C below. Clearly, recruiting a portion of the subject through personal announcements and another portion through phone calls is not optimal, because it may induce differential expectations by the subjects, and different degrees of identification with the experimenter. However, alternative recruitment strategies that would have addressed this issue were unfeasible. An alternative strategy, for instance, would have been to gather association members' telephone contacts from the associations, communicate these contacts to Demoskopea, and have Demoskopea call members on the phone. This would have ensured that members and non-members would be contacted in the same way. However, this strategy was unfeasible because associations are generally unwilling to transfer their members' contact details to external agencies. Another strategy might have been to sub-contract to Demoskopea the recruitment of both members and non-

members. However, given the relative scarcity of active members in the general population[16], and the consequent need for Demoskopea to contact a very large number of people, this method would have proved far too expensive with respect to our available budget. We believe that carrying out recruitment following the same protocol in the two samples ensures that this effect is at most small.

All participants were contacted following the same recruitment protocol. The text of the announcement read to subjects during the recruitment interview is reported in the next section. Subjects were told they were invited to participate in a research on inter-personal decision-making. It was specified that participants' earnings could vary between approximately 0€and 50€depending on the participant and others' choices. It was specified that the option of earning 25€for sure was always available to subjects. Such a sum was deemed as appropriate to incentivise an adult to participate in a research session. It was also made clear that the research aimed at recruiting a sample from the general population of the province of Parma and surrounding provinces. Under no circumstances was the research presented to prospective subjects as focusing on association members. Association members who signed up for participation in the experiment were randomly assigned to the ingroup or outgroup treatment.

B. Recruitment Protocol for members

Most of members have been recruited by GDA, occasionally by GG. GDA or GG gave the following announcement below before association meetings.

Good morning. I'm a member of a research group that is working with the University of Parma. We are carrying out a research project on individual decisions. We would like to ask you if you would be interested in participating in the research. The participation implies the possibility to earn a sum of money, as I will explain shortly. Residents in the province of Parma or in neighbouring provinces contacted by us or by other people who collaborate in the project will be invited to take part in the research.

One of the requirements of the research methodology is not to reveal in advance the specific objectives and the precise methodology characterising the research. For this reason, in what follows I cannot be completely exhaustive. I will indicate only the essential aspects of the project. The goals and results of the research will be explained to those who are interested once it is finished. A seminar will be held where we will present the results of this study.

The objectives of the research are to study individual decisions in a group setting. Several people will be invited to participate in our sessions. Each participant will be endowed with an amount of

[16]According to ISTAT (2011), 11,21% of Parma residents are active voluntary members of some associations.

money to make these decisions. The endowment can be used to choose among different options. The final earnings of each participant will depend on his individual decision and of those of the other people in his group. In the second part of the research you will be asked to fill out a questionnaire concerning your opinions on today's society. The research will last up to one hour.

How in practice the activity will take place and how you can earn money will be explained in detail during the research session. However, the basic idea is the following. Each participant will receive an endowment equal to 25 Euros. The choice will consist of allocating these 25 Euros between different options. One of the choice options can duplicate the sum of 25 Euros, bringing to 50 Euros, but it can also lead to entirely lose the 25 Euros. Other options can generate gains between these two extremes and, in some cases, even higher gains. The participant may always choose the option <u>not to</u> commit the initial 25 Euros, thus ensuring that his final gain is exactly 25 Euros. In all other cases, the final gain will depend in part on chance and in part on the decisions of other participants. The payment will be paid in cash at the end of the research. The decisions and responses to the questionnaire will be completely anonymous.

No special skills are required for participation. The only requirements are that you have lived in the province of Parma or in neighbouring provinces for at least one year, and that you are an Italian citizen. You will be free, if you want, to leave the research session in any moment.

After this announcement, researchers handed out a registration form including name, phone contacts, the sessions in which the subject was able to participate within the research calendar, and some questions about the participants' demographic characteristics, i.e. gender, age, educational achievements, occupation. Subjects were subsequently re-contacted to communicate the slot to which they had been assigned. About 50% of people being present at the meeting agreed to participate.

C. Recruitment Protocol for non-members

People were contacted by phone by Demoskopea collaborators, following the below instructions:

Good morning. I'm calling on behalf of a research group that is working with the University of Parma. We are carrying out a research project on individual decisions. We would like to ask you if you would be interested in participating in the research. The participation implies the possibility to earn a sum of money, as I will explain shortly. Residents in the province of Parma or in neighbouring provinces contacted by us or by other people who collaborate in the project will be invited to take part in the research.

In case the subject is interested proceed with screening demographic questions.

FILTER QUESTION. Are you a voluntary member (without receiving remuneration) of some associations (e.g. associations of volunteers such as the Red Cross or WWF, or cultural associations such as choirs, reading circles, sport associations) or organisations (e.g. professional associations, such as Confcommercio[17] or trade unions)?

(See the list of types of associations in the end of the protocol).

If yes, how many hours do you spend volunteering in this activity per month?

If No, in the past were you a voluntary member of some associations/organisations? How many hours did you spend volunteering in this activity per month?

If subject was currently an active member, the invitation was declined. The interviewer thanked and greeted the interviewee. If the subject was not currently an active member, the interviewer proceeded as follows:

Now we can go into the details of the research project.

One of the requirements of the research methodology is not to reveal in advance the specific objectives and the precise methodology characterising the research. For this reason, in what follows I cannot be completely exhaustive. I will indicate only the essential aspects of the project. The goals and results of the research will be explained to those who are interested once it is finished. A seminar will be held where we will present the results of this study.

The objectives of the research are to study individual decisions in a group setting. Several people will be invited to participate in our sessions. Each participant will be endowed with an amount of money to make these decisions. The endowment can be used to choose among different options. The final earnings of each participant will depend on his individual decision and of those of the other people in his group. In the second part of the research you will be asked to fill out a questionnaire concerning your opinions on today's society. The research will last up to one hour.

How in practice the activity will take place and how you can earn money will be explained in detail during the research session. However, the basic idea is the following. Each participant will receive an endowment equal to 25 Euros. The choice will consist of allocating these 25 Euros between different options. One of the choice options can duplicate the sum of 25 Euros, bringing to

[17] Confcommercio is a well-known professional association in Italy - author entry.

50 Euros, but it can also lead to entirely lose the 25 Euros. Other options can generate gains between these two extremes and, in some cases, even higher gains. The participant may always choose the option not to commit the initial 25 Euros, thus ensuring that his final gain is exactly 25 Euros. In all other cases, the final gain will depend in part on chance and in part on the decisions of other participants. The payment will be paid in cash at the end of the research. The decisions and responses to the questionnaire will be completely anonymous.

No special skills are required for participation. The only requirements are that you have lived in the province of Parma or in neighbouring provinces for at least one year, and that you are an Italian citizen. You will be free, if you want, to leave the research session in any moment.

The following note was given to the interviewer with regards to the filter question:

Please note: to be a "member" of an association involves having regular membership and registration, usually accompanied by a card and a registration number. The question on hours spent in the association per month differentiates the "active" members (at least one hour per month of participation in the activities of the association) from "non-active" members.

Associations that are deemed relevant in relation to the filter question

Social welfare services for elderly, handicapped, or deprived people
Religious or church organisations
Education, arts, music or cultural activities (for example: members of choirs, theatre groups, reading groups)
Trade Unions
Political parties or groups
Third world development or human rights (e.g. Fair Trade, Amnesty International)
Conservation, the environment, ecology (e.g. Greenpeace, WWF).
Professional associations
Youth work (e.g., scouts, guides, youth clubs, etc.)
Sport or recreational associations
Feminist organisations or groups
Peace movements
Health organisations of volunteers (e.g.. Red Cross; Blood donations etc.)

V. Experiment instructions and protocol

A. General description of experimental protocol

Experiments were conducted between May and October 2011 in Parma, Italy. For each experimental session, two groups of subjects were convened at two different locations of the University of Parma. GDA and GG were present at the two different locations. Upon their arrival, subjects' were asked to draw at random one envelope form a stack of envelopes. The envelope contained an ID number, and 5 paper tokens representing 5 Euros each. It was explained to subjects that the ID number would guarantee their anonymity throughout the research, and that the tokens would have been used in the experimental decisions. Handing subjects the tokens at the beginning of the session was functional to assuring subjects that the promised guaranteed payment of 25 Euros would in fact take place.

In the ingroup treatment, subjects who had signed up to participate were randomly allocated to the two groups. In the outgroup treatment, one of the two groups comprised people recruited by Demoskopea, while the other group was formed by association members recruited by the experimenters (see SOM: Section IV). To form the latter group, we mixed people coming from several different associations, so that most of the people part of this group would, with high probability, not be acquainted with each other. In this way, we believe that association members could see in their own group a cross-section of Parma residents that, for the most part, was unacquainted to them. That this was in fact the case can be confirmed by the results of a control question included in the questionnaire, which asked people to state whether they thought they knew personally people present in the other research room. Around 41% of Members participating in the in-group treatment answered positively to such question, whereas only 7% of Members answered positively to the same question in the out-group treatment. According to a two-tailed Mann-Whitney test, the difference is statistically significant at less than the 1% level.

The two groups were then separately conducted to two different rooms of the University library. Experimental sessions were run in parallel by the two experimenters. The assignment of the two experimenters to either room or group was randomised. After having been seated, instructions were administered orally, but written instructions and diagrams representing the situation of choice were also made available at subjects' desk. Subjects were instructed they would participate in two decisions, and that payments would be given by the payoff of only one of the two. The decision determining the payment was selected by a 50-50 random draw realised by the computer at the end of the session.

The rules of the TG were then illustrated to subjects, making use of some graphs and examples. The instructions are reported below in Section V.B. Each participant was paired with another participant present in the other room. In case the number of subjects in the two groups was unbalanced, some randomly drawn participants from the least numerous group (let us call her Player A) would have been matched with two participants from the most numerous group (let us call them Player Bs). In this way, player A's actions would determine the payoffs for both player Bs, and the actions of one randomly chosen player between the Player Bs would have determined Player A's payoff. Subjects were assured they could meet the other experimenter and the other group at the end of the session, should they wish so. It was explained that individual choices would have been transferred to the experimenter in the other room via an internet connection.

Given the expected low computer literacy of subjects, all experiments were conducted with "pen and paper". In the first decision, all subjects acted as senders. When subjects made their decision as senders, they were not aware they would have made a decision as receivers later on. It was explained that both senders and receivers were endowed with 25€. Senders' choice consisted of placing their five 5€tokens into two envelopes named "Personal" and "Send". Each token put into the Personal envelope would enter directly the sender's final account, whereas each token put into the "Send" envelope would have been multiplied by a factor of two and transferred to the receiver. Prior to making their choice as senders, subjects' comprehension was assessed in a six-question quiz. Answers to the test were illustrated after all subjects had answered. Subjects were given ample time to understand the decision and ask questions. Below we comment further on the results of the comprehension test.

In the second decision, subjects acted as receivers. We applied the strategy method, so subjects had to indicate in a form the amount they wished to return for each of the possible six options available to the sender. Receivers could send back any amount between zero and the sum of the amount transferred by the sender, multiplied by two, and the 25€endowment. Before making their choices, subjects were asked to complete a six-question comprehension test on a paper sheet. These were collected by the experimenters and then the solution to the test was explained to subjects. No feedback was given between the two decisions. It was specified that a player's partner when acting as a sender would have been different to the same player's partner when acting as a receiver. To compute payoffs, we randomly matched a sender's (receiver's) decision from a subject in one room to a receiver's (sender's) decision by a subject from the other room. We then performed a random draw to determine whether subjects from a room would be paid for their decisions when acting as senders or receivers. After the two experimental choices, we elicited subjects' beliefs. We then administered the attitudinal and demographic questionnaire. Payments were computed by the

experimenters while subjects answered the questionnaire, and distributed in cash at the end of the session. The random pairing was determined by the order with which subjects' decision envelopes were extracted from a box. A pre-set Excel algorithm authomatically performed the random matching and ensured no re-matching with the same person would take place between the two decisions.

We preferred not to ask subjects to re-answer the questions in case of mistakes in the comprehension quiz, because we thought this would have conveyed the impression that subjects had "to pass an exam" to qualify for the experiment. This would have likely sounded unnatural and stressful for many subjects. We preferred to collect subjects' answers, and use the number of mistakes in the quizzes as a covariate in the econometric analysis. As shown in Table S5, the average number of errors was 1.18 for non-members and 0.94 for members. The difference is statistically significant (P= 0.0197). Overall, about 53.7% of subjects made no mistakes, 15.5% made one mistake, 15.2% made two mistakes, and the remaining subjects made between three and six mistakes. All our results on membership and intensity are unaffected, and in fact somewhat strengthened, by expunging from the sample subjects who answered incorrectly the comprehension test (not reported, available upon request). The results on the absence of ingroup effects cannot be replicated because of the considerable drop in observations.

The research session lasted around 75 minutes. Average payoffs were 31.7 Euros (std. dev. 11.99). In three cases did a participant in the pair earn nothing while the other earned the maximum available amount – 75 Euros.

In what follows we report the experimental protocol. All parts in italics were read aloud to participants. The final questionnaire is available upon request.

B. Instructions and experimental protocol

Two groups of subjects are summoned in two different locations at the University of Parma. The two experimenters, GDA and GG, are present, welcome subjects as they arrive, and check their registration. When a sufficient number of people have arrived, the experimenters administer the following instructions:

Welcome to this research on individual decisions. My name is Giacomo Degli Antoni (GDA)/ Gianluca Grimalda (GG) and I am here to conduct this research session. Before going to the room where the research session will take place, I would like you to draw one envelope from this deck, and to keep the envelopes closed until the beginning of the research. The envelope contains materials that will be used later. In particular, inside the envelope you will find your identification number, which will be important to ensure your anonymity at all stages of the research. We will

record your choices and responses through this identification number, rather than through your name. It will also be the number that will allow you to be paid at the end of the research. For this reason, it is important that you keep your number safe, without showing it to anyone but the researchers. Inside the envelope you will also find five cards, each card representing €5.These cards will be used during the research and will be converted into cash at its end. Could you please come towards me one by one and draw one envelope? Thank you!

Once the two groups are formed, they are conducted to the library in two separate rooms. We take care that the two groups do not meet. Subjects sit at desks separated by opaque screens to protect privacy. Subjects can choose the seat that they prefer. Once everyone is seated the experimenters can start with the following set of instructions.

Welcome again to this research project organised in collaboration with the University of Parma. A group of researchers is working on the way in which individuals make decisions. The researchers present today are GDA (GG), and my colleague GG (GDA), who is leading a session in another room of this library. Our two locations are connected through the internet.

Researchers show their personal computers at their desks, and explain that subjects' decisions will be entered in an Excel spreadsheet, and then sent via the internet to the researcher present in the other room.

The research session is divided into two phases. In the first phase you will take some decisions involving other people. In the second part you will be asked to fill out a questionnaire. The entire session will last approximately one hour. You are kindly requested not to talk to other participants and to be quiet throughout the session. If something is not clear please raise your hand and ask us questions. You can now open the envelope that you drew earlier. You can find inside a sheet of several stickers where an identification number has been printed. As already explained, this is the number that guarantees your anonymity in the research. You may also find an envelope. At the end of this session, while you fill the questionnaire, we will compute your earnings and leave the money in that envelope. After having calculated your earnings and inserted them into the envelopes, we will leave the envelopes on this table.

Researchers show a table, close to the exit, where the envelopes will be placed at the end of the session.

You will pick up the envelope associated with your identification number after having completed the questionnaire. Inside the envelope you will also found two receipts that you should fill out after having checked your earnings. You will leave the receipts in the large envelope named "RECEIPTS" hang onto the exit door, and you will be free to leave the room. Please take out the

sheet of stickers now and attach a sticker on the back of the envelope. Leave the receipts in the envelope. I will collect the envelope later on.

Researchers show the large envelope named "RECEIPTS" pasted to the exit door.

Finally you may find inside the envelopes 5 cards representing €5 each. Please remove them from the envelope.

Each card has "5€" printed on them.

Let us now describe the situation of choice. It is important to pay attention to these instructions because the amount you will earn at the end of the session depends on these decisions. You will take part in two decisions. However, you will be paid only for one of them. Which decision you will be paid for is determined by a random draw at the end of the session. Each decision has an equal chance of being drawn.

In the first decision you will be paired with another person who is not in this room. He is with the other group of people with whom we are carrying out this session. The other group is listening to instructions like the ones I am reading to you. If you want, at the end of this session you will be able to meet this other group of people. However, the identity of the person with whom you have been paired will not be revealed, nor your identity will be revealed to him or her.

In the ingroup treatment instructions read:

The person with whom you will be paired is a member of the Association X {researcher states the name of the association} *of which you are also a member, and is resident in Parma, or its province, or in neighbouring provinces. He was asked to take part in the research in a similar way as you have been contacted.*

In Outgroup Treatment instructions read:

The person with whom you will be paired is resident in the province of Parma or in neighbouring provinces. This person has been contacted within a large sample of people of Italian citizenship residing in Parma, or its province, or in neighbouring provinces. We have contacted more than a thousand people from various age groups and socio-economic status, to participate in this research.

From now on, instructions were the same in both treatments:

The first decision takes place as follows. We will call the two participants in this decision, "SENDER" and "RECEIVER". At the beginning of this session, both have received 25€in tokens of 5€each. The decision takes place in two stages. In the first stage, the SENDER can send a part of the 25€to the RECEIVER. The SENDER may choose not to send anything, or to send 5€, or 10€, or 15€, or 20€, or the full amount of 25 €. The amount sent by the SENDER will be doubled by the researchers and transferred to the RECEIVER.

In the second stage, the RECEIVER has the opportunity to send back to the SENDER part of the total amount in his possession. This is determined by his initial 25€, plus the sum received by the SENDER that has been doubled by the researchers. The RECEIVER may decide to send back any percentage of the total amount in his possession. The amount that is transferred from the RECEIVER will not be doubled. The RECEIVER will not know the amount sent by the SENDER when making his decision. He must indicate on a sheet of paper the amount he wants to send back for each of the six possible amounts that can be sent by the SENDER. At the end of the session my colleague and I will match via the internet the decisions of each SENDER and RECEIVER who have been paired.

Let us now see an example of a decision through a chart.

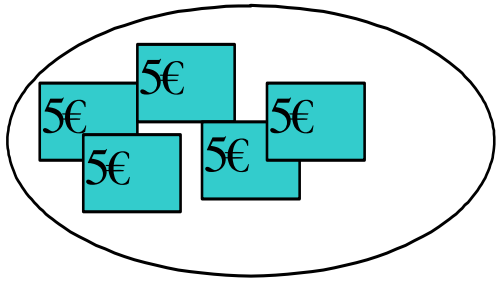
Show the poster as an example. Posters are reported in the next page of instructions.

Copies of the examples are available on your desk.

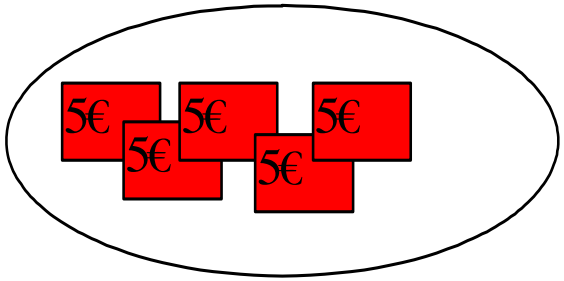
Both the SENDER and the RECEIVER receive 25€at the beginning of the decision. In the first phase, the SENDER sends a part of these 25€to the RECEIVER (10€in this example). The SENDER is free to send 0€, 5€, 10€, 15€, 20€, or 25€. The amount sent is doubled and added to the 25€already in possession of the RECEIVER. In the second phase, the RECEIVER can send back to the SENDER any part of what he holds. The amount transferred from the RECEIVER to the SENDER is not doubled (in this example, the RECEIVER sends back 15€). The final sum for the SENDER is given by the initial 25€minus the amount sent plus the sum sent back by the RECEIVER. The final sum for the RECEIVER is given by the initial €25plus the double of the sum sent by the SENDER, minus the sum sent back.

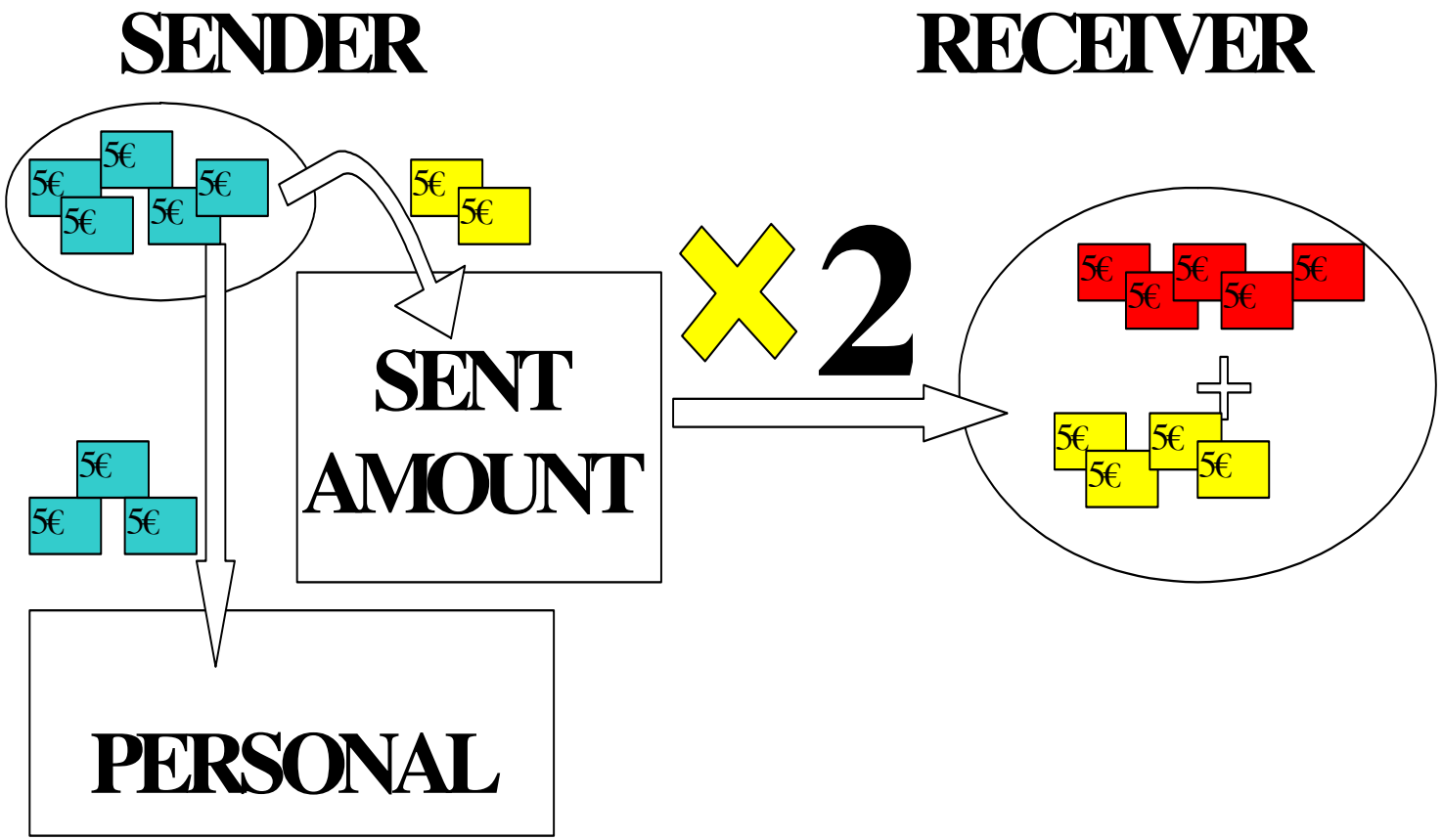
Researchers illustrate the example showing A2-format posters, reproduced in the following pages.

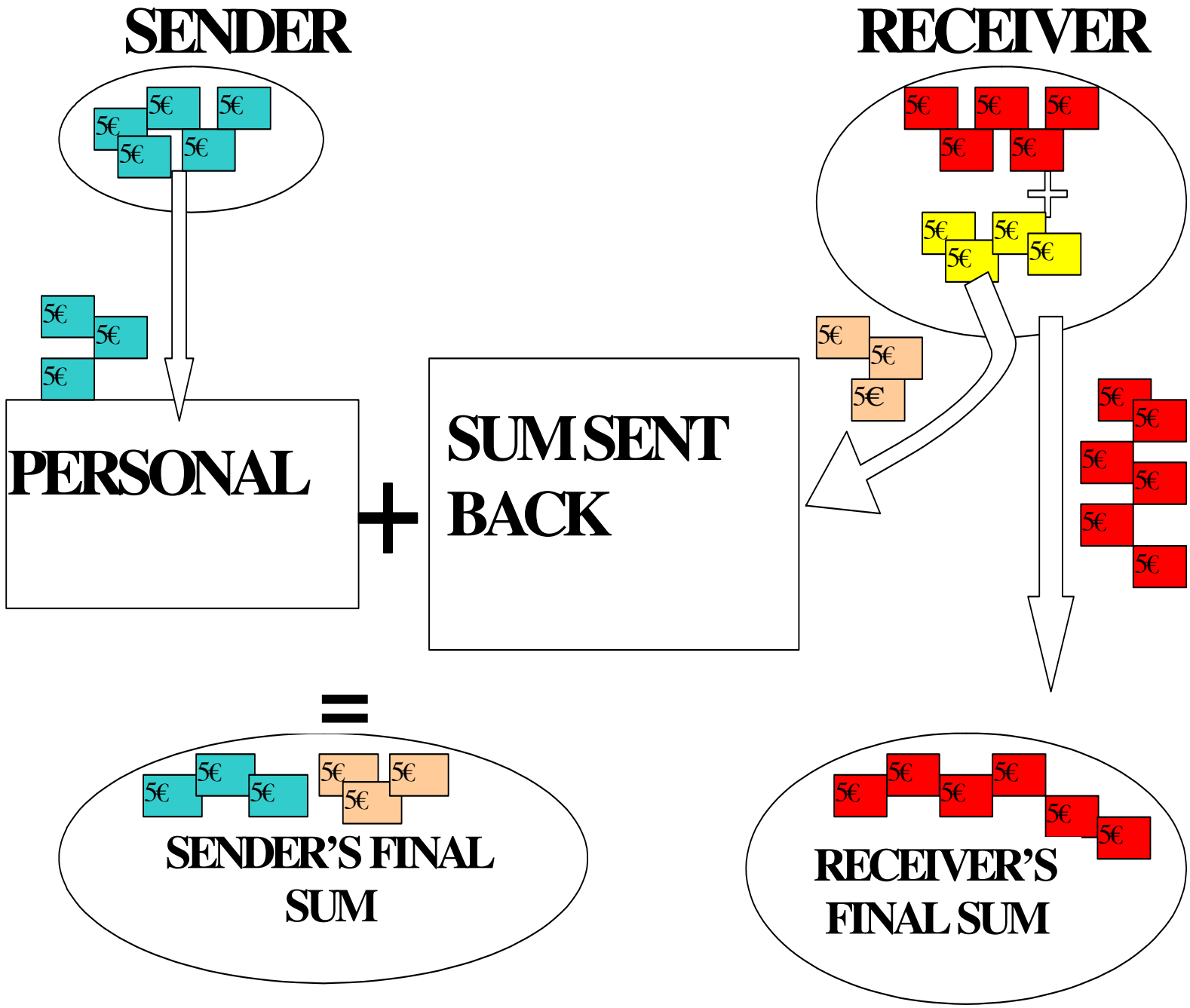
SENDER



RECEIVER




SENDER
RECEIVER
5€
SENT
AMOUNT
×2
PERSONAL


SENDER
RECEIVER
PERSONAL
+
SUM SENT BACK
=
SENDER'S FINAL SUM
RECEIVER'S FINAL SUM

We will now see some examples and we will try to calculate the final earnings of the SENDER and the RECEIVER. Please take the example sheet on your desk. Please attach another sticker with your identification number on the sheet on your table and try to answer the questions. When you have finished, please raise your hand and we will pick up the sheet with your answers, along with the envelope with your identification number. We will deliver also other envelopes. We will then go through the solutions together.

Examples sheet

Example 1

Suppose that the SENDER sends0 €to the RECEIVER and the RECEIVER do not send anything back to the SENDER. How much is the final sum for the two people?

Final sum sender

_____

Final sum receiver

_____

Example 2

Suppose that the SENDER sends20 €out of the 25€in his possession to the RECEIVER and the RECEIVER sends back to the SENDER 5€How much is the final sum for the two people?

Final sum sender

_____

Final sum receiver

_____

Example 3

Suppose that the SENDER sends all his 25€to the RECEIVER and the RECEIVER sends back to the SENDER 35€ How much is the final sum for the two people?

Final sum sender

_____

Final sum receiver

_____

Researchers answer subjects' questions and then collect the answers to quiz from all subjects. While collecting the answer sheets researchers also pick up the ID envelope. They check that the identification number has been stuck on the front of the envelope and that the envelope contains the receipts. At the same time Researchers hand out the envelopes named "PERSONAL" and "AMOUNT SENT".

Now, let us consider the solutions of the examples.

Consider the first example: Would someone like to tell me what is the final sum for the two people?

Wait for the answers from the subjects.

In this case it is quite simple. Both earn 25€ that have been allocated to them at the beginning.

Researchers explain example showing to subjects A2-format posters, reproduced in the following pages.

Consider the second example: Would someone like to tell me what is the final sum for the two people?

Wait for the answers from the subjects.

The correct answer is that the SENDER earns 10€. This is equal to the initial 25€, minus the 20€ sent to the RECEIVER, plus 5€ received from the RECEIVER. The RECEIVER earns 60€. This is equal to the initial 25€, plus 20€ received from the SENDER (which are doubled), minus 5€ who are sent back.

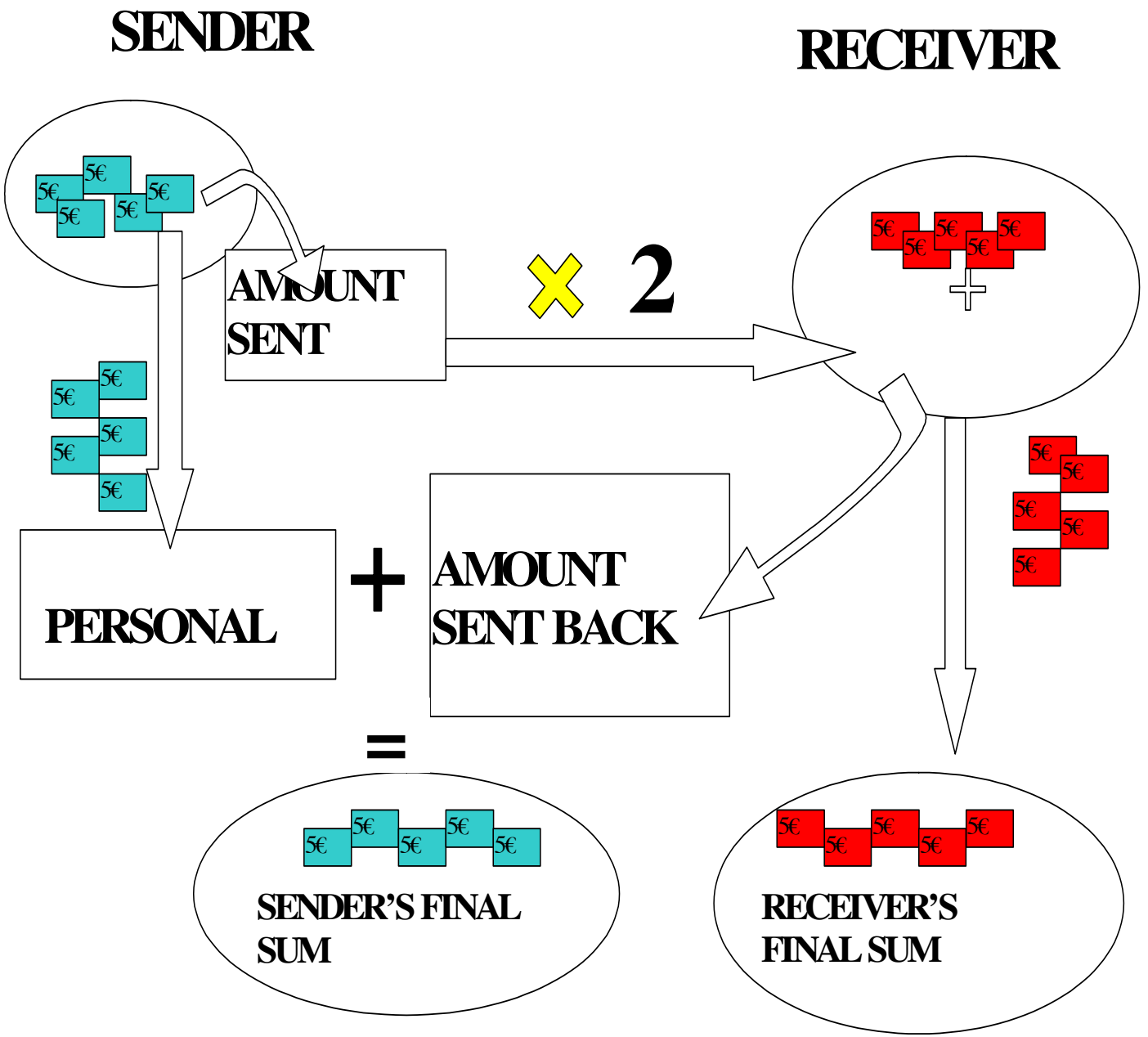
Consider the third example:

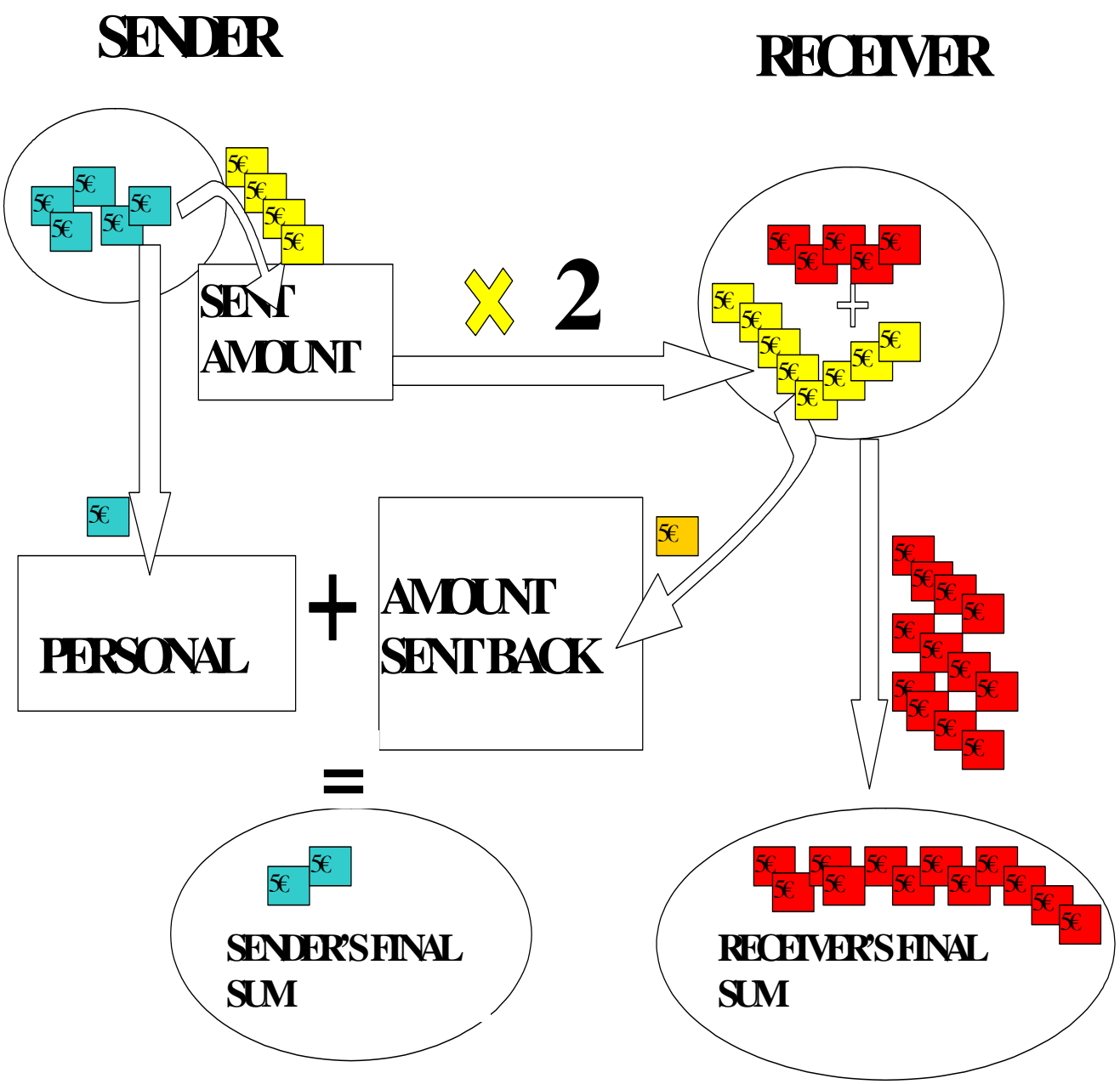
Would someone like to tell me what is the final sum for the two people?

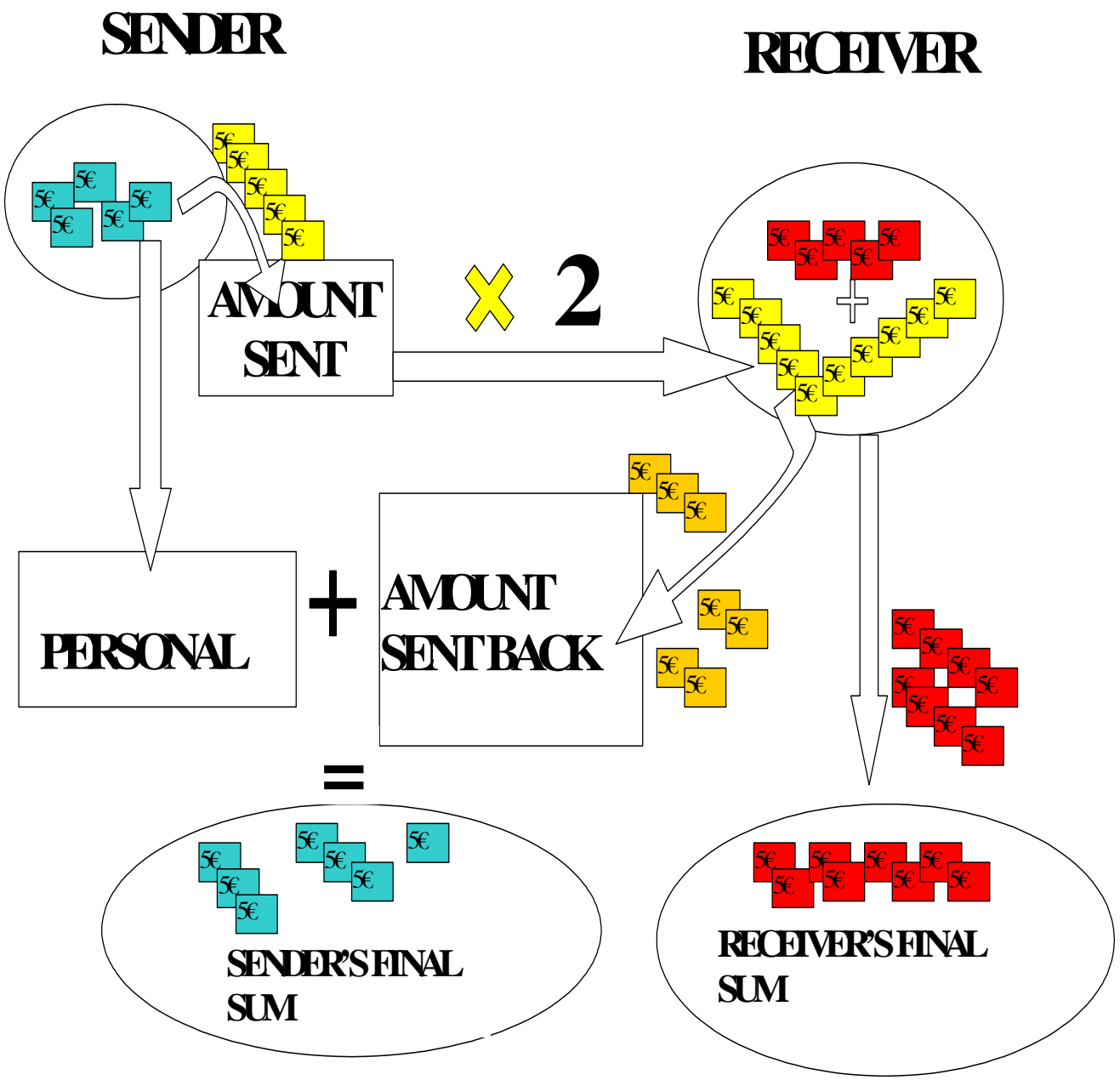
Wait for the answers from the subjects.

The correct answer is that the SENDER earns 35€ in total. This is equal to the 35€ that have been sent back by the RECEIVER. The RECEIVER earns 40€. This is equal to the initial 25€, plus 25€ that are sent by the SENDER and that have been doubled, minus 35€ which are sent back to the SENDER.

It is clear what this choice situation is all about? If there are no further questions, we can now move on to your actual decisions.


SENDER
RECEIVER
AMOUNT SENT
× 2
PERSONAL
+
AMOUNT SENT BACK
=
SENDER'S FINAL SUM
RECEIVER'S FINAL SUM


SENDER
RECEIVER
SENT AMOUNT
x 2
PERSONAL
+
AMOUNT SENT BACK
=
SENDER'S FINAL SUM
RECEIVER'S FINAL SUM


SENDER
RECEIVER
AMOUNT SENT
x 2
PERSONAL
+
AMOUNT SENT BACK
=
SENDER'S FINAL SUM
RECEIVER'S FINAL SUM

Firstly, we are going to reveal who will act as SENDER and who as RECEIVER. The role of SENDER has been assigned to each of you, while the role of RECEIVER has been assigned to the people in the other room. Now you have to choose how much you want to send to the RECEIVER. Two envelopes have been handed out to you. They are named "PERSONAL" and "AMOUNT SENT". Please attach two stickers with the identification number on the back of these envelopes. You have to put the number of 5€ cards that you want to send to the RECEIVER in the envelope "AMOUNT SENT". You have to put the number of cards equal to the sum that you want to keep in the envelope "PERSONAL". For example, if you want to send 15€ you will have to insert two cards in the envelope marked "PERSONAL" and three cards in the envelope marked "AMOUNT SENT". After your decision is completed, we will collect your envelopes in a box. Later on, while you fill out the questionnaire, we will match the decision of each of you with that of the RECEIVER to whom you have been paired, and this will determine your payment for this first decision.

In most cases, each person will be paired with another person. But there is the possibility that the number of people in the other room is a little less or greater than the number of people present in this room. Although we tried to have the same number of people in the two groups, it is possible that someone is not present or that someone leaves the research session. What shall we do in these cases? For most of you nothing will change with respect to what we have already said, but for some of you the rule we follow to form pairs will be modified. For example, if this group has one person more than the other group, we will use the decisions of a person of the other group to determine the payments for two people in this group. Who exactly are these two people in this group and who is the person in the other group will be determined by a random draw during the calculation of payments. In addition, we will use the choice of only one of the two people in this group to determine the payments of the person in the other group. It is clear how the pairs are formed in this case?

Are the characteristics of this decision clear? If there are no questions, please proceed to your choice. When everyone has finished I will pick your choices.

Leave a little time for the participants to complete their choice. Researchers sit at their desk, not interfering with subjects' choices and avoiding eye contact. After a couple of minutes researchers ask if everyone is finished. When this is the case they go round with a box, and ask subjects to stick their envelopes into the box.

We can now move on to the second decision. For this decision you will be paired again with a person present in the other room. The person with whom you are paired will be different from that of the first decision.

The choice situation is the same as the one previously described, but in this second decision you will have the role of RECEIVER, while the person in the other room is assigned the role of SENDER.

Since we still do not know the decisions of the people in the other room, please indicate in the sheet that will be handed out to you in a few moments the amount you wish to send back to the SENDER for each of the possible choices.

Researchers show a copy of the decision sheets and illustrate it. They point out it is necessary to fill out each row of the form. When everyone is clear, they start handing out the sheets.

Please attach a sticker with your identification number onto the sheet. Please make sure you write in the amount you wish to send back for each possible amount sent by the SENDER. Remember that the sum that you can send back can never exceed what is in your possession. While you fill out the questionnaire we will check the amount sent by the SENDER, and we will send back what you have decided. This will determine your payment for this second decision. Is that clear? You can now fill out the decision sheet. When you have finished, please raise your hand, and fold the sheet. When everyone has finished we will pass to collect the sheets.

Researchers leave the subjects a few minutes to make their choice. They sit at their desk and start entering subjects' prior decision in an Excel worksheet. When everyone has finished they go round and collect decision sheets in the box.

We have thus concluded the decisions phase. Before moving on to the questionnaire, we would like to give you another opportunity to earn some money. We would like to ask your expectations on the behaviour of the other person you have been matched with. That is, we would like to ask how much the receiver with whom you have been matched sent back when you acted as sender, and how much the sender you have been matched with sent to you when you acted as a receiver. You will earn 1 Euro if your answer is correct. Please fill out the form that I am going to hand out.

Researchers hand out the form reproduced in the next page.

Identification Number

Question 1

(You will receive 1euro if your answer differs no more than 3euros from the correct answer).

Consider the first decision you made, that is, when you acted as a sender. How much do you think the receiver sent back to you?

(Remember that the receiver could return a maximum equal to the doubled amount transferred by you and the initial endowment of 25€).

Please indicate how much you sent to the receiver[18]: _____

Please indicate how much you think the receiver sent back to you: _____

Question 2

(You will receive 1euro if your answer is correct)

Consider the second decision you made, that is, when you acted as a receiver.

How much do you think that the sender has sent to you? _____

(Recall that the sender could send a maximum of 25€).

[18]Note by the authors: At the moment of making their decision as senders, subjects were instructed to take note of the amount they had sent.

After all subjects have finished, the researchers collect the expectation forms.

We will now conduct a random draw to determine whether you will be paid for the first decision or the second decision you have made. At the end of the session, if you wish, you will be able to learn for which decision you have been paid, and the decisions of the people with whom you have been paired. I am now going to hand out a questionnaire. Please answer all the questions, it is very important for us to know your views on the society in which we live. When you have finished you can go to pick up the envelope with the number corresponding to your identification number on the table here.

After arranging the envelopes on the table of payments, the experimenters stand at some distance from the table not to interfere with subjects finding out about their payoffs. Researchers check that subjects hand in the questionnaire and collect the envelope with the corresponding ID number.

Identification Number

RECEIVER'S decisions form

If the SENDER sends:	I receive	Adding the initial 25€, I have in total:	The SENDER owns:	In this case I decide to send back:
0€	0€	25€	25€	_____ (remember that you can transfer between 0€and 25€)
If the SENDER sends:	I receive	Adding the initial 25€, I have in total:	The SENDER owns:	In this case I decide to send back:
5€	10€	35€	20€	(remember that you can transfer between 0€and 35€)
If the SENDER sends:	I receive	Adding the initial 25€, I have in total:	The SENDER owns:	In this case I decide to send back:
10€	20€	45€	15€	_____ (remember that you can transfer between 0€and 45€)
If the SENDER sends:	I receive	Adding the initial 25€, I have in total:	The SENDER owns:	In this case I decide to send back:
15€	30€	55€	10€	_____ (remember that you can transfer between 0€and 55€)
If the SENDER sends:	I receive	Adding the initial 25€, I have in total:	The SENDER owns:	In this case I decide to send back:
20€	40€	65€	5€	_____ (remember that you can transfer between 0€and 65€)
If the SENDER sends:	I receive	Adding the initial 25€, I have in total:	The SENDER owns:	In this case I decide to send back:
25€	50€	75€	0€	_____ (remember that you can transfer between 0€and 75€)

REFERENCES

Degli Antoni, Giacomo. 2009. "Voluntary associations and trustworthiness: an empirical examination at Italian regional level". In *Paid and Unpaid Labour in the Social Economy*, eds. Sergio Destefanis and Marco Musella, 183-96. Heidelberg: Physica Verlag.

Degli Antoni, Giacomo, and Gianluca Grimalda. 2013. "Optimistic expectations or other-regarding preferences? Analysing the determinants of trust among association members." Working Papers 2013/21, Economics Department, Universitat Jaume I.

Degli Antoni, Giacomo, and Fabio Sabatini. 2013. "Disentangling the relationship between nonprofit and social capital: the role of social cooperatives and social welfare associations in the development of networks of strong and weak ties." EconomEtica Working Papers n.48, http://www.econometica.it/wp/wp48.pdf

Forum Solidarietà – Centro di Servizi per il Volontariato in Parma. 2011. "Pagine aperte", available online at: http://www.forumsolidarieta.it/indice_news/pagine_aperte_tutte_associazioni/default.aspx

ISTAT. 2011. 9° "Censimento industria e servizi e Istituzioni non profit 2011" - Census industry and services and non-profit institutions in 2011.

Knack, Stephen, and Philip Keefer. 1997. "Does Social capital have an economic payoff? A cross country investigation." *Quarterly Journal of Economics*, 112(4):1251-1287.

Sabatini, Fabio, Francesca Modena, and Ermanno Tortia. 2014. "Do cooperative enterprises create social trust?." *Small Business Economics*, 42 (3): 621-641.