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Group polarization in the team dictator game reconsidered

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Abstract While most papers on team decision-making find that teams behave more selfishly, less trustingly and less altruistically than individuals, Cason and Mui (1997) report that teams are more altruistic than individuals in a dictator game. Using a within-subjects design we re-examine group polarization by letting subjects make individual as well as team decisions in an experimental dictator game. In our experiment teams are more selfish than individuals, and the most selfish team member has the strongest influence on team decisions. Various explanations for the different findings in Cason and Mui (1997) and in our paper are discussed.

Keywords Experiment · Dictator game · Team behavior · Social preferences

JEL Classification C72 · C91 · C92 · D70

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1 Introduction

Team decision-making has attracted more and more interest among economists in recent years. Although the standard models of economic theory largely neglect the type of the decision-maker by simply assuming individual decision-making, many economic decisions are made by teams such as families, company boards, management teams, committees, or central bank boards. One of the key requirements of team decision-making is the need to aggregate individual preferences into one single team decision.

In this paper we will examine the aggregation of social preferences in an experimental team dictator game. This simple game isolates pure distributional concerns from any strategic considerations that shape bargaining behavior, for instance, in the well-known ultimatum game (Güth et al. 1982).[1] Hence, using the dictator game allows us to investigate how individual preferences with respect to the allocation of money between a dictator and a (powerless) recipient are transformed into a team decision.

In general, the experimental literature on unitary team[2] behavior in simple bargaining games is rather coherent in its finding that team decisions are typically closer to standard game theoretic predictions than individual decisions, that teams seem to be more strongly motivated by payoff maximization and that their decisions are more selfish. For example, teams have been found to send and accept smaller transfers in the ultimatum game (Bornstein and Yaniv 1998), send (Kugler et al. 2007) or return (Cox 2002) smaller amounts in the trust game,[3] choose lower efforts as second movers in a gift-exchange game (Kocher and Sutter 2007), play more strategically and more often according to theoretical predictions in signaling games (Cooper and Kagel 2005), exit the centipede game at earlier stages (Bornstein et al. 2004), make more rational decisions in intellective tasks, such as the Wason selection task (Maciejovsky and Budescu 2007) or a non-interactive common-pool-resource game (Gillet et al. 2007), and gain a higher payoff/risk ratio in investment games (Rockenbach et al. 2007) or higher payoffs in lottery choices (Sutter 2007). In auctions, teams display much more competitive bidding behavior leading to higher rates of overbidding (Cox and Hayne 2006; Sutter et al. 2006).

In contrast to this large body of evidence, Cason and Mui (1997) find teams to be more altruistic and other-regarding than individuals. In their experimental dictator

[1] Forsythe et al. (1994) used the dictator game in order to study which share of the transfers observed in the ultimatum game can be explained by pure altruistic motivations. By removing the responder's option to reject the proposer's offer, any strategic reason for generous offers in the dictator game is eliminated, thus leaving only social preferences such as altruism, warm glow or inequality aversion as possible explanations.

[2] With "unitary" teams we denote teams that do not face any internal conflict in terms of payoff and that must make a single team decision.

[3] The findings of Cox (2002) and Kugler et al. (2007) are not completely consistent. Cox (2002) finds no differences between teams and individuals in the roles of senders but observes that teams return significantly less in the role of responders. Kugler et al. (2007) report the opposite with teams sending smaller amounts than individuals, whereas returns of teams and individuals do not differ.

game, each subject has to make two decisions on the allocation of five dollars, once individually and once in a two-person team. Cason and Mui (1997) show that team decisions are driven by the more altruistic team member. They conclude that "this makes team choices more other-regarding than individual choices for these teams, although the difference is modest" (p. 1480). More precisely, individuals transfer on average 26.09% of their endowment to the receiver, compared to the 27.61% of teams. Cason and Mui (1997) explain this effect by referring to "Social Comparison Theory" (SCT). SCT states that subjects have a tendency to appear and present themselves in teams in a way that is deemed socially desirable. After having observed other subjects' behavior or choices or after having discussed the possible options in a game, the own behavior is modified to appear more in line with the perceived social norms. If other-regarding behavior is socially desirable, then team decisions can be expected to be more other-regarding than individual decisions.[4]

Though (or perhaps because) the results of Cason and Mui (1997) do not fit the overall picture emerging from team decision experiments, they have been frequently cited and are widely accepted as a notable exception in the evidence on team decision-making (see, for example, Bosman and van Winden 2002; Andreoni and Petrie 2004; Bornstein et al. 2004; Cooper and Kagel 2005; Kocher and Sutter 2005; Dufwenberg and Muren 2006). Given the prominence that the results of Cason and Mui (1997) have achieved, and since we consider replications of results important in experimental economics, this paper examines the robustness of Cason and Mui's (1997) findings. Moreover, it adds some interesting new insights on the decision-making process within teams.

We are not aware of any other attempt to replicate the findings of Cason and Mui (1997).[5] A somewhat related paper is by Dufwenberg and Muren (2006) who study the influence of the gender composition of teams on giving in a dictator game. However, they do not compare individual to team decisions, which is the main focus of our paper.

The paper is organized in the following way: We describe our experimental design and procedure in Sect. 2. Section 3 presents the experimental results. Section 4 discusses our findings and concludes.

2 Experimental design and procedure

The dictator game was first introduced by Kahnemann et al. (1986) in an empirical study on fairness in the market place. In this game, a dictator decides on the distrib-

[4]Cason and Mui (1997) reject "Persuasive Argument Theory" (PAT) as a possible explanation for their data. The bottom-line of PAT is that team discussion is able to shift choices in favor of the pre-discussion or initial tendency by a higher attentiveness towards more persuasive arguments in favor of one's initial position. Both theories, SCT and PAT, have their roots in the psychological discussion of "group polarization" and choice shifts (see e.g., Stoner 1961; Teger and Pruitt 1967; Moscovici and Zavalloni 1969; Davis 1992; Kerr et al. 1996; Levine and Moreland 1998). A general model of choice shifts (for choices under uncertainty) can be found in Eliaz et al. (2006).

[5]Note, of course, that second movers in a trust game are basically in the situation of a dictator, as they can determine the final distribution of money between the first and the second mover. However, players' motivations in the trust game can involve reciprocity, which constitutes a clear difference to the dictator game.

ution of a given stake between himself and a second party, the receiver. The second party does not have any other option than to take whatever the dictator allocates to her.

In our experiment participants were randomly assigned to the role of either dictator or receiver.[6] These roles were fixed throughout the experiment. Subjects in the role of dictator received 5 € as their endowment in each of three stages of the experiment. The following describes the three stages of our main experimental treatment, denoted as TEAM-treatment.

- Stage S1: Each subject in the role of the dictator decides individually on the transfer T to an individual receiver, where $T \in \{0.0, 0.1, 0.2, \ldots, 4.9, 5.0\}$.
- Stage S2: Each subject in the role of the dictator is a member of a three-person team. Each team has to make a single decision on the transfer T to a receiver team that also consists of three subjects. The per-capita incentives are kept identical in all stages, such that in stage S2 each team member in the role of the dictator earns $5 - T$ €, and each member in the receiver-team earns T €.
- Stage S3: Each subject in the role of the dictator has to make a second individual decision under the same rules as in stage S1.

In order to separate the effects of team decision-making from the possible learning effects across the three stages in the TEAM-treatment, we have set up a CONTROL-treatment in which the second stage S2 is also played individually. Hence, in the CONTROL-treatment subjects make three individual decisions in a row. Comparing the data from stage S2 in both treatments provides a (between-subjects) way of discriminating order effects (through repetitions of the same task) and team vs. individual treatment effects.[7]

In both treatments, participants were informed that the experiment consisted of three consecutive stages and that decisions in each stage were completely independent and would not have any impact on subsequent stages. There was no feedback of any kind before the end of the experiment, and participants were only informed about the rules of the next stage after all decisions in a respective stage had been made. Given this procedure we regard it as rather unlikely that any decision could have been influenced by an (at that stage unknown) later decision. We used a publicly announced perfect stranger design throughout the three stages, meaning that no dictator was ever paired with a particular receiver more than once.

An important feature of our design is the assignment of individuals into teams in our TEAM-treatment. First of all, we opted for teams of three subjects each in order to address Cason and Mui's (1997) suggested extension of checking whether their empirical findings generalize when the size of teams gets larger (p. 1480). Extending the team size from two members to three members may have important implications for the decision-making procedure within a team. With two members, it is most likely

[6] Since we expected that receivers would earn little money, they were invited to participate in an individual decision-making experiment. This second experiment was announced and conducted after the dictator experiment had been finished.

[7] We are grateful to an anonymous referee and James Cox for suggesting this CONTROL-treatment as a robustness check.

that unanimous (compromise) decisions will be taken (unless one member voluntarily surrenders to the decision of the other member). With three members, applying an implicit majority rule becomes an option. This latter feature of three-person teams might have an impact on resulting team decisions. However, only very little is known about the influence of team size on team decisions, in particular when social preferences are involved. We are only aware of one study by Wildschut et al. (2001), who have not found any differences between the cooperation levels of two- and three-person teams in a prisoner's dilemma game.

Second, we have used the individual stage S1-choices as an instrument to set up heterogeneous teams in a systematic way. Based on their stage S1-decision we have classified subjects into terciles. Those in the lowest tercile are the "*most selfish*" subjects, those in the highest tercile the "*most other-regarding*", and those in the middle the "*moderate*" subjects. Within each tercile, subjects are ranked in ascending order according to their individual transfer in stage S1. Each team then consists of the three members with the same rank in each of the three terciles. This procedure guarantees that all teams are very similar with respect to the within-team heterogeneity concerning individual transfers from stage S1. It will allow us to track the influence of the most selfish, the moderate, or the most other-regarding member on the final team decision in a straightforward manner.

In order to gain further insights into the process of aggregating individual preferences and into the structure of team discussions, the communication within each team was possible exclusively via an electronic chat program with protocols being stored for later analysis.[8] Subjects were requested to agree on a joint (unanimous) decision within ten minutes. As soon as a team had reached an agreement, each member had to type in this decision on his own screen. Note that we did not specify how teams had to arrive at a joint decision. Even though the inputs of all three members had to be identical to be valid—otherwise the team would not have been paid for this stage (which never happened, actually)[9]—some teams argued in the chat that a simple majority in case of no unanimous agreement would be sufficient and the third member would have to abide by the majority in such a case. Of course, there was no way to enforce such a within-team agreement.

At the end of the experiment we gathered data on subjects' gender, allowing us to examine the influence of gender and gender composition on individual and team decisions. The experiment was computerized (using z-Tree; Fischbacher 2007) with 220 students from the University of Innsbruck from various fields of study. 180 students participated in the TEAM-treatment, yielding 180 observations on individual decision-making (90 in stage S1 and 90 in stage S3) and 30 observations from teams along with concomitant chat-protocols (from stage S2). 40 students participated in the CONTROL-treatment, yielding 20 decisions of dictators in each of the three stages.

[8]The content of messages within a team was not restricted, except for forbidding abusive language and revealing one's identity (through seat number, name, gender, age, courses taken, etc.). See the experimental instructions that can be obtained from the web page of the journal for details.

[9]The instructions specified that in such a case the transfer to the paired team would have been determined randomly.

Table 1 Transfers in the dictator game

A. TEAM-treatment	Stage S1 1st individual transfer ($N = 90$)	Stage S2 Team transfer ($N = 30$)	Stage S3 2nd individual transfer ($N = 90$)
Average transfer T	0.94[a,b]	0.54[a,d]	0.66[b,c]
Standard deviation	1.07	0.56	0.85
Mode (= Minimum)	0.00	0.00	0.00
Relative frequency of Mode (= Minimum)	34.4%	40.0%	46.7%
Maximum	5.0	1.5	2.5
Relative frequency of Maximum	1.1%	13.3%	8.9%
B. CONTROL-treatment	**1st individual transfer ($N = 20$)**	**2nd individual transfer ($N = 20$)**	**3rd individual transfer ($N = 20$)**
Average transfer T	1.27	1.17[d]	1.25[c]
Standard deviation	1.25	1.17	1.11
Mode (= Maximum)	2.5	0/2.5	2.5
Relative frequency of Mode	45%	35%	35%
Minimum	0.00	0.00	0.00
Relative frequency of Minimum	40%	35%	25%

[a]Significantly different at $p < 0.01$

[b]Significantly different at $p < 0.01$

[c]Significantly different at $p < 0.05$

[d]Significantly different at $p = 0.069$

3 Results

Table 1 shows the main indicators with respect to the chosen transfers. Panel A of the table refers to the TEAM-treatment, and panel B presents data from the CONTROL-treatment.

In stage S1 of the TEAM-treatment, individuals send on average 0.94 € to the receiver, i.e. 19% of the endowment.[10] The modal transfer (of about one third of subjects) is zero. The transfers of teams in stage S2 are significantly smaller than those of individuals in stage S1 ($p < 0.01$; Wilcoxon signed ranks test; $N = 30$). Teams transfer only 0.54 € or about 11% of their endowment. The maximum transfer is 1.5 € out of 5 €, and 12 out of 30 teams transfer zero. It turns out that the experience of team decision-making even carries over to individual decisions in stage S3. On average, the transfers in S3 are 0.66 € (or about 13%), and they are significantly smaller

[10]This average is well within the range of transfers (10% to 23%) reported in the survey on experimental dictator games by Camerer (2003).

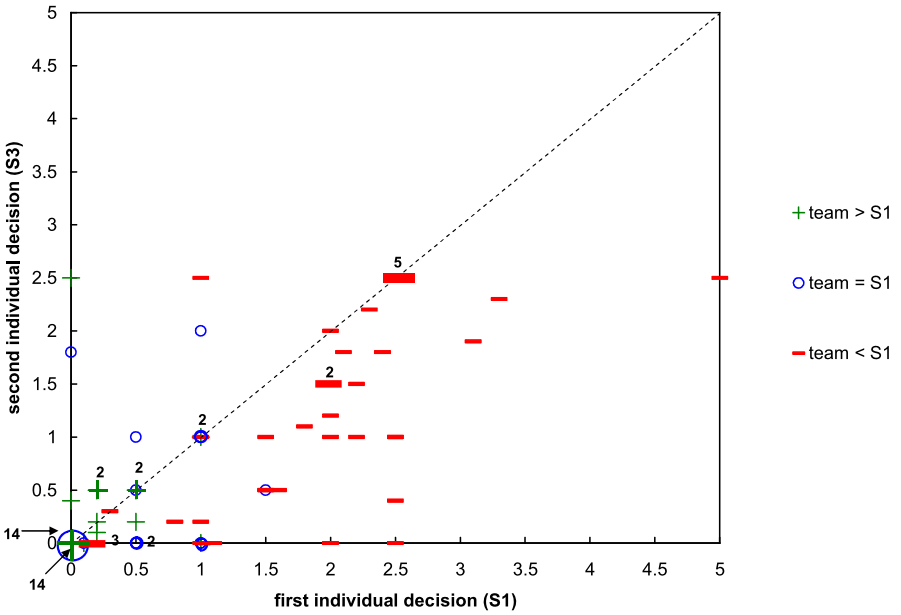

Fig. 1 Changes of individual decisions contingent on team decision (multiple observations indicated)

than individual transfers in S1 ($p < 0.01$; Wilcoxon signed ranks test; $N = 90$), but not significantly different from the team decisions in stage S2 ($p > 0.5$).

In the CONTROL-treatment, we find that average transfers stay basically stable across all three stages. It is important to note that transfers in the first stage S1 are not significantly different between both treatments (0.94 € vs. 1.27 €; $p > 0.3$; Mann–Whitney U-test; $N = 110$). However, transfers in the second stage S2 are significantly different between teams (in the TEAM-treatment) and individuals (in the CONTROL-treatment), indicating that team decision-making drives down transfers and not the repetition of the task (0.54 € vs. 1.17 €; $p = 0.069$; Mann–Whitney U-test; $N = 50$). Transfers in the third stage S3 are again significantly lower in the TEAM-treatment than in the CONTROL-treatment (0.66 € vs. 1.25 €; $p < 0.05$; Mann–Whitney U-test; $N = 110$). This latter result confirms the influence of the experience of team decision-making on the final individual decision (contrary to a possible learning effect across stages).

Figure 1 sheds more light on the influence of team decision-making on subsequent individual decisions in the TEAM-treatment. It shows a subject's individual decision in stage S1 on the horizontal axis and the individual decision in stage S3 on the vertical axis. Observations below the diagonal indicate a decrease of transfers from S1 to S3. Individuals are classified according to the relationship between the team's decision in stage S2 and their first individual decision in stage S1. Note that when the team decision is larger than (see "+" in the figure) or equal to the first individual decision in stage S1 (see "○"), then there is no a systematic effect of the team decision on the subsequent individual decision in stage S3. However, if the team decision is smaller than the S1-decision (see "–") individuals reduce their transfer from S1 to S3

Table 2 OLS and Tobit estimates for team transfers in the TEAM-treatment

Dependent variable: *team transfer*	OLS		Tobit	
	Coefficient	Robust standard errors	Coefficient	Standard errors
Transfer of "most selfish" member in stage S1	1.037[a]	0.46	1.554[c]	0.912
Transfer of "moderate" member in stage S1	0.131	0.19	0.213	0.247
Transfer of "most other-regarding" member in stage S1	−0.094	0.08	−0.215	0.209
Constant	0.615[b]	0.20	0.556	0.445
Observations	30		30	
R^2/Log likelihood	0.08		−31.3574	

[a] $p < 0.05$

[b] $p < 0.01$

[c] $p = 0.11$

in almost all cases, indicated by the "–" signs below the 45-degree line. The latter result implies a strong influence of team decision-making on individual decisions *if* the team decision is more selfish than the initial individual decision, rendering the subsequent individual decision also more selfish.

Next we examine the process of team decision-making. We have estimated a linear as well as a Tobit model explaining a team's transfer in S2 as a function of its members' individual transfers in the preceding stage S1. Given that both models yield qualitatively similar results, and due to the low number of censored observations, we will only discuss the results from the OLS estimation (see Table 2). The "most selfish" team member (i.e. the team member with the lowest transfer in S1) has by far the largest and, in particular, the only significant impact on the team transfer.[11] The lower the "most selfish" member's transfer in S1, the lower is the team transfer in S2. This finding is in contrast to the evidence from Cason and Mui (1997), who have found that the team transfer is driven by the most other-regarding member.

In order to gain further insights into the driving forces behind a team's decision we resort to the contents of the chat protocols. On average, teams exchanged 22.3 messages (125 words) before reaching an agreement.[12] However, the variance was rather large, with the shortest chat including only five messages with 18 words and the longest one including 58 messages with 353 words (see the Appendix for a translation of both). In Table 3 we list the arguments that have been voiced in at least two separate teams.

[11] Cox (2002) reports the same pattern for the second mover teams in his team trust game.

[12] Neither the number of exchanged messages nor the number of words has any statistically significant impact on team transfers in stage S2.

Table 3 Main arguments in the electronic team chat in the TEAM-treatment

Argument	Number of teams where argument is discussed	Relative frequency of teams with argument	Average transfers
Keep more for ourselves	22	73.3%	0.51
Fairness and ...			
... smaller transfers	11	36.7%	0.52
... higher transfers	6	20.0%	0.70
Rationality	4	13.3%	0.25
Economic expertise	2	6.7%	0.00

Table 4 Main arguments and number of words in the chat of the TEAM-treatment

Argument / Member	More for ourselves	Fairness and smaller transfers	Fairness and higher transfers	Rationality	Economic expertise	Number of words
"Most selfish"	37.93%	56.25%	37.93%	50.00%	50.00%	33.53%
"Moderate"	31.03%	18.75%	30.77%	25.00%	50.00%	32.01%
"Most other-regarding"	31.03%	25.00%	30.77%	25.00%	0.00%	34.46%

The argument of sending small transfers in order to "keep more for ourselves" is voiced most often, namely in 22 out of 30 teams, and these teams send on average a transfer of 0.51 €. This argument appeals to group identity by promoting a better outcome for the members of the team. It is never associated with the blunt claim that the team should behave selfishly.

The notion of "fairness" is mentioned in 17 out of 30 teams. It is used, however, in two markedly different contexts. There are 11 teams in which remarks on fairness are actually used to support less generous transfers, and a typical argument is that "they [the recipients] can't expect us to send a fair share since they wouldn't do it either" (Team T5). These teams send on average 0.52 €. In 6 teams the notion of fairness is put forward to induce more generous transfers or to prevent relatively small transfers. One example is that "... it's not fair to send only 20 cents, but we should send 1 euro" (Team T18). When fairness is mentioned in this context, the average transfer is 0.70 €.

In four teams one member mentions that it would be "rational" to send a specific amount, without however defining rationality. Two subjects in different teams proposed zero transfers and justified their proposal based on their "economic expertise".

In sum, the arguments put forward seem to support the observation that smaller—rather than larger—transfers were the predominant social norm, often supported by arguments linked to payoff maximization or rational decision-making, as indicated in Table 3. Under these circumstances both PAT as well as SCT would, in fact, predict smaller transfers of teams than of individuals, which is what we actually observe.

The results from Tables 2 and 3 raise the question of why the most selfish team member has such a strong impact on the team's decision. Table 4 breaks down the

Table 5 Decision rules, team composition and transfers

Decision rule	Other-regarding (OR)		Self-regarding (SR)	
	N	Av. transfer	*N*	Av. transfer
Unanimity	2	0.50	5	0.70
Majority	3	0.00	4	0.25
Compromise	8	0.89	7	0.31

main arguments put forward in the electronic chat by the type of member (most selfish, moderate or most other-regarding from stage S1). The first thing to notice from the right-most column is that the relative frequency of words written in the chat is basically the same over the three types. Hence, the most selfish members do not argue more actively. On average, however, we notice that the most selfish members of a team invoke arguments of fairness in connection with smaller transfers, rationality and economic expertise more often than the other members, even though the differences are not statistically significant due to the rather low number of observations. In sum, the evidence in Table 4 suggests that the mere presence of a selfish team member or the expression of selfish ideas (promoting small transfers as being fair; see also Table 3) induces smaller transfers in many teams.

As noted in Sect. 2 above, teams with three members may resort to majority-rule decision-making in the event that there is not a unanimous agreement on a particular transfer. As a final analysis of the team decision-making process, we summarize in Table 5 the decision rules actually applied and the associated transfers. A unanimous decision was identified only if all team members independently suggested the same transfer or if the first stated option was accepted by all three members without discussing any alternatives (see "Unanimity"). If there was at least one alternative proposal that was overruled, or if at least one member had to be convinced of an alternative transfer, this team was classified as using a "Majority" rule. A "Compromise" was reached if *all three members* agreed to a transfer that was different from their first proposal. In Table 5 we also classify teams with respect to their members' preferences. If the "moderate" member's individual transfer in stage S1 was below the overall median[13] of 0.5 €, a team was classified as self-regarding (SR); if it was above the overall median it was considered as an other-regarding (OR) team.

We expected to find self-regarding teams to send lower transfers than other-regarding teams. Yet, Table 5 does not fulfill this expectation, since the lowest average transfers were actually sent by other-regarding teams that used a majority rule. Overall, we do not find any significant differences between the entries in Table 5 (Kruskal–Wallis-Test; $p > 0.1$). Hence, the type of decision-making rule applied in a team does not seem to have a systematic influence on the chosen transfers, although one has to bear in mind that the number of observations in each category of Table 5 is relatively small.[14]

[13] Following Cason and Mui (1997), we define the median of all individual transfers in stage S1 of the TEAM-treatment as our "neutral point".

[14] The same holds for gender composition of teams. We do not find any significant differences in transfers between teams with at least two women (0.56 €) and teams with at least two men (0.53 €). In the indi-

4 Conclusion

Our experimental results indicate that teams choose significantly smaller transfers than individuals in a dictator game and that individuals shift their transfers towards the team transfer when asked to make a second decision after team interaction. Even though the differences between individual and team decisions are modest in absolute terms (amounting to 40 Eurocents between stages S1 and S2), the difference is quite large in relative terms (43%). Hence, team decisions appear to be noticeably more selfish than individual ones.

This main result of our paper is in line with the large majority of experimental papers that have shown that team decisions are more selfish and competitive, less trusting and less altruistic than individual decisions (see, e.g., Bornstein and Yaniv 1998; Bornstein et al. 2004; Cooper and Kagel 2005; Cox 2002; Kocher and Sutter 2005; Kugler et al. 2007).

Our data are in contrast to Cason and Mui's (1997) results, though. In the following we would like to discuss several possible explanations for the different findings. First, Cason and Mui (1997) have controlled for the order of decision-making by having two treatments, one with the sequence "individual-team" decision-making, and another with the reverse order "team-individual". They find teams to be more altruistic in both treatments. We have not been able to control for the order of decision-making in the way Cason and Mui (1997) did, because our procedure for setting up teams required an individual decision prior to the team decision-making stage and, therefore, rules out a team decision as the first stage. Yet, we regard it as unlikely that order effects might have caused the differences, because (1) Cason and Mui (1997) did not observe an order effect, and (2) our treatment variation (TEAM vs. CONTROL) produced no significantly different transfers in the first stage, irrespective of whether there was a team or an individual decision in the second stage, but it yielded significantly smaller transfers of teams than of individuals in the second stage.

Second, Cason and Mui (1997) have implemented two-person teams, whereas we have set up teams with three members. So far, there is little systematic variation of the size of teams in economic experiments and little evidence regarding its influence on team decisions where social preferences are important.[15] Yet,

vidual decision-making stages of the TEAM-treatment—as in the CONTROL-treatment—we also do not find any differences in transfers of men or women (detailed figures are available upon request). Recall that Dufwenberg and Muren (2006) report an impact of gender. Yet, in their design the gender (composition) of teams was common knowledge, whereas it was not known in our design (the revelation of one's gender was forbidden in the chat). The seeming contradiction can be reconciled by the finding of Bolton and Katok (1995), who have observed that those experiments that reveal subjects' gender typically find significant gender effects, while studies without such information usually fail to report significant effects (see also Andreoni and Vesterlund 2001, or Cox and Deck 2006, for a systematic treatment of gender differences in bargaining).

[15] In the context of a beauty-contest game Sutter (2005) has shown that larger teams (of four subjects) win the game more often than smaller teams (of two subjects) or individuals. The superiority of (larger) teams might be explained by the fact that team discussion forces team members to approach a problem more systematically and that team discussion provides ample opportunity for error-checking (see Davis and Harless 1996, for an account of these advantages of team decision-making). Yet, these explanations apply much more to intellective tasks (such as a beauty-contest game or monopoly pricing) than to tasks where social preferences play a major role.

the scarce evidence does not support the conjecture that three-person teams act differently than two-person teams. Wildschut et al. (2001) do not report differences between two-person and three-person teams in a prisoner's dilemma game. Comparing across different studies, teams have been found to be more strategic (e.g., Cooper and Kagel 2005) and less altruistic (e.g., Bornstein and Yaniv 1998; Cox 2002) with two, three or five members. Our evidence from Table 5 also implies that the decision-making rule (unanimity versus majority rule, with the latter not being possible in two-person teams) does not cause significant differences. In sum, it seems therefore unlikely that the different size of teams may have caused the differences between our study and the one by Cason and Mui (1997).

Third, in the experiment of Cason and Mui (1997) "every team was called to the front of the room (by identification numbers) and excused to the hallway to discuss their decision and fill out the form in private" (p. 1471). This procedure entails two further, possibly important sources for the contrasting evidence. On the one hand, calling team members to the front of the room identifies the members of a team. Even though their decisions have remained anonymous in the experiment, the mere identification may have caused the higher transfers of teams. In fact, the evidence from Bohnet and Frey (1999) shows that transfers in the dictator game increase with identification of subjects (without revealing decisions). On the other hand, the teams in Cason and Mui's (1997) experiment used face-to-face discussion, whereas in our experiment team members interacted only via an electronic chat. Both approaches have their merits, but need not be neutral with respect to their influence on final decisions. The face-to-face design captures a richer contextual field of personal encounters when teams make decisions. The electronic chat-approach provides a more controlled environment by preserving anonymity and avoiding confounding factors such as, for instance, personal sympathy or antipathy or prior acquaintance of team members unknown to the experimenter. The differences between both approaches might induce different degrees of social distance (within and across teams), which could trigger the different results. In fact, Kocher and Sutter (2007) have found first mover-teams in a gift-exchange game to act differently, depending upon whether team members are requested to reach a decision via face-to-face communication or via voting electronically on different proposals. When using the electronic form of communication, teams make more selfish decisions.[16] The same mechanism could be the driving force behind the different findings in Cason and Mui (1997) and the current paper, meaning that there is no fundamental inconsistency between the two contributions. Obviously, studying the effects of different communication media on team decision-making seems to be an important avenue for future research in order to enhance our understanding of team decision-making.

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[16] A somewhat related result can be found in Güth et al. (2007). They show in a large-scale newspaper experiment that (individual) decisions in a three-person ultimatum game are more selfish if submitted via Internet than via the more personal form of sending a letter.

Appendix Two examples of the chat conversation

The initial number in each line indicates a particular team member (1 to 3). Italic text at the end of a chat refers to the individual decisions in stages S1 and S3.

1. The most extensive discussion

1: Obvious decision, don't you think?
3: Sure, all for ourselves.
1: I am no good Samaritan.
3. Transfer: 0.
3: Right, neither am I.
1: We are not responsible for b, are we?
1: Therefore 0.
1: OK. I'll enter it.
3: No. 2, do you share our opinion?
2: I think we should be fair.
3: I don't. Nobody has ever been fair to me.
1: 0 is fair.
2: Wait a second don't enter anything.
3: Next time you are b and don't receive anything.
1: There's still the show up.
2: That's a joke.
3: I have also left once only with the show up.
1: Me too.
3: I don't care about the show up. . .I vote for 0!!!
2: What's this penny-pinching about?
2: We need a compromise.
1: I still don't understand your point 2.
3: Yes, democracy! Two against one.
3: Please 2, I have been the sucker too often. I am lucky this time and in the position to make some money.
3: Transfer = 0?
2: You need those additional 2.5 so desperately?
3: To be honest: yes.
3: . . . and I did not get those 2.5 too often.
1: Why should we give the money away?
3: Why?
3: Quick now, come on, please enter 0?
2: I don't want to play the upholder of moral standards, but I don't get your point. Compromise: 2.
1: I enter 0.
2: I enter 1.5.
1: You can go on being nice after the experiment.
3: Great, we will all get nothing, are you aware of that?
3: You don't even know to whom you send the money!

2: Just like b.
2: 1.5.
1: 0.
3: Apart from that, I am with No. 1: 2:1 for 0. Please accept it No. 2!
2: Hey, 1.5 is obliging.
1: Obliging. . .But completely useless.
3: Please 2, hurry up and say 0.
2: 1.5.
2: Ciao.
3: What are you doing????
1: If we do not hurry up, we all will get nothing.
3: 1, what are you doing?
1: So, what?
3: 2, what's the deal, that's impossible!!!!!!!!!!!
2: 1.5.
1: 1?
2: OK.
3: So, for heavens sake, make that 1!

Individual transfers before team stage/after team stage:

1: 0/0.
2: 2.5/2.5.
3: 2.5/0.

2. The shortest discussion

2: I vote for 1 EURO transfer.
1: That's OK.
3: For me too.
1: That's a fast decision.
2: Great.

Individual transfers before team stage/after team stage:

1: 0.5/0.2.
2: 1/2.5.
3: 1.5/0.5.

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