

## **Suggested further reading.**

### **An annotated list accompanying “Groups make Better Self-interested Decisions” by Gary Charness and Matthias Sutter**

The following list highlights the main results of several prominent (economics) papers that compare group decision-making and individual decision-making. Papers referred to in our *Journal of Economic Perspectives* article are not mentioned here. This list is not intended to be exhaustive and is undoubtedly incomplete. We apologize for omissions.

#### **Group decision-making in strategic games**

##### **Ultimatum game**

Bornstein and Yaniv (1998) studied individual versus group behavior in a standard, one-shot ultimatum game, in which a proposer makes a proposal for how to split a fixed cake size ( $c$ ) between himself ( $c-t$ ) and a responder ( $t$ ). If the responder accepted the proposer's offer  $t$ , the pie was split accordingly; otherwise both received nothing. Bornstein and Yaniv (1998) found that groups (of three subjects each) demand, on average, about 10 percentage points more for themselves in the role of proposer than individuals do. Groups also seem to accept smaller offers, but the number of observations is too small to draw firm conclusions on second-mover behavior.

##### **Trust game**

Cox (2002) found no significant difference between groups and individuals in the amounts sent by first-movers in the trust game, but groups returned significantly smaller amounts. Kugler, Bornstein, Kocher and Sutter (2007) largely confirm the latter result, as they who report slightly smaller returns of groups as second-movers on average and significantly-smaller transfers of groups as first-movers.

##### **Gift-exchange games**

The gift-exchange game is, in structure, similar to the trust game. A first mover offers a “wage” to a second mover, who can choose costly “effort” in response. Both Kocher and Sutter (2007)

and Brady and Wu (2010) showed that the interaction protocol in groups has an influence on whether group decisions differ from individual decisions or not. Kocher and Sutter (2007) found lower wages and effort for groups compared to individuals when there was electronic chat communication among group members, in a treatment with face-to-face communication among group members, wages are not significantly different from individual wages, but effort is, in fact, significantly higher.

### **Auctions**

Cox and Hayne (2006) studied common-value auctions, finding no significant differences with respect to overbidding between individuals and groups. Conditional on winning the auction, groups (of five subjects each) were reported to overbid significantly more than individuals in one out of four treatments. Sutter, Kocher and Strauß (2009) found that groups experience more frequent losses in a four-player ascending sealed-bid English auction, but that the difference was not significant.

### **Financial markets**

Cheung and Palan (2011) studied behavior of individuals and groups (of two subjects each) on experimental asset markets where a fictitious asset could be traded in a simultaneous double-auction. They found that bubble formation, i.e., mispricing, was significantly smaller if groups traded on these markets than if individuals did, suggesting that market efficiency is higher with groups as traders.

## **Group decision making in non-strategic settings**

### **Dictator game**

Cason and Mui (1997) studied individual and group behavior in the dictator game. In this game, a dictator can transfer any amount  $x \leq c$  to a powerless recipient, thus implementing payoffs of  $c - x$  for the dictator and  $x$  for the recipient. The data in Cason and Mui (1997) show no significant difference in transfers of individuals or groups of two subjects each. However, exploiting their within-subject design, Cason and Mui (1997) were able to show that *if* group members differed in their individual dictator game choices, *then* the more other-regarding group member had a stronger influence on the group decision. Using groups of three persons, Luhan, Kocher and

Sutter (2009) found that group transfers are almost 40% lower than individual transfers, and that in particular the experience of group decision-making has an effect on subsequent individual decisions such that lower group transfers reduce subsequent individual transfers.

### **Decision making under risk**

Several papers studied whether groups comply more or less with the axioms of expected utility theory (EUT) or are less prone to behavioral biases. For instance, exposing both groups and individuals to choice tasks that allow detecting violations of EUT, neither Bone, Hey and Suckling (1999) nor Rockenbach, Sadrieh and Mathauschek (2007) found evidence for systematic differences between individuals and groups in either direction.

Concerning the question whether groups take more or less risks than individuals, the existing evidence from risky lottery choices of individuals and groups is mixed. Baker, Laury and Williams (2008) and Masclet, Colombier, Denant-Boemont and Lohéac (2009) reported that groups were more risk averse in lottery choices than individuals, while Harrison, Lau, Rutström and Tarazona-Gómez (2005) found no significant difference between individuals and groups, and Zhang and Casari (2011) showed that groups were less risk averse than individuals. Shupp and Williams (2008) found that the average group is *more* risk averse than the average individual in high-risk situations, but groups tend to be *less* risk averse in low-risk situations.

Blinder and Morgan (2005) were interested in the question whether groups were slower in reaching decisions, showing that this is not the case. They ran two laboratory experiments – one a statistical urn problem, the other a monetary policy experiment to steer a virtual economy – to test the hypothesis that groups made decisions more slowly than individuals. In both experiments, groups were just as quick as individuals to reach decisions, measured as the amount of information they were collecting before making a decision.

### **Effects of responsibility for other group members in strategic and non-strategic settings**

Charness and Jackson (2009) studied the effects of responsibility in a Stag-Hunt coordination game. They compared a situation where one member in a two-person group could dictate the group's decision and a condition where only individuals interacted. Roughly one third of subjects

were affected in their behavior by being responsible for another person, inducing nearly 90% of them to adopt the less risky strategy.

Pahlke, Strasser and Vieider (2012) extended Charness and Jackson (2009) by studying the effects of accountability. Individuals had to make choices under risk that affected themselves and a powerless recipient. While in a responsibility treatment, there was no further interaction between the decision maker and the recipient, in the accountability treatment the decision maker faced a positive probability that she had to justify face-to-face her choices to the recipient after the experiment. Pahlke et al. (2012) found that accountability reduced loss aversion in mixed prospects that had an expected value of zero, thus making decisions more consistent with standard theory.

Hargreaves Heap and Zizzo (2009) included an SI-treatment in their experiment on trust games. In this treatment, there was basically a tournament between two groups with the multiplier in the trust game as the potential prize. The group with the higher transfers as first-movers received a multiplier of four, while the losing group only received a multiplier of two. This implied that individual decisions had monetary consequences for the other group members. Hargreaves Heap and Zizzo (2009) found that the transfers in this treatment were significantly lower than in an individual control treatment, which is a very similar finding to Song (2008).

Sutter (2009) studied a simple investment task and let individuals make decisions for their other group members, observing that this increased investment levels. Most importantly, he compared treatments where individuals made decisions on behalf of groups with decisions made by groups, finding that individual decisions on behalf of groups are not significantly different from decisions made by groups.

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