



# Social Preferences in the Lab: A Comparison of Students and a Representative Population

Alexander W. Cappelen  
Knut Nygaard  
Erik Ø. Sørensen  
Bertil Tungodden

CESIFO WORKING PAPER NO. 3511  
CATEGORY 13: BEHAVIOURAL ECONOMICS  
JULY 2011

*An electronic version of the paper may be downloaded*

- from the SSRN website: [www.SSRN.com](http://www.SSRN.com)
- from the RePEc website: [www.RePEc.org](http://www.RePEc.org)
- from the CESifo website: [www.CESifo-group.org/wp](http://www.CESifo-group.org/wp)

# Social Preferences in the Lab: A Comparison of Students and a Representative Population

## Abstract

Can lab experiments on student populations serve to identify the motivational forces present in society at large? We address this question by conducting, to our knowledge, the first study of social preferences that brings a nationally representative population into the lab, and we compare their behavior to the behavior of different student populations. Our study shows that students may not be informative of the role of social preferences in the broader population. We find that the representative participants differ fundamentally from students both in their level of selfishness and in the relative importance assigned to different moral motives. It is also interesting to note that while we do not find any substantial gender differences among the students, males and females in the representative group differ fundamentally in their moral motivation.

JEL-Code: C910.

Keywords: social preferences, representative population, dictator game, trust game.

*Alexander W. Cappelen*  
*Norwegian School of Economics and*  
*Business Administration*  
*Bergen / Norway*  
*alexander.cappelen@nhh.no*

*Knut Nygaard*  
*Norwegian School of Economics and*  
*Business Administration*  
*Bergen / Norway*  
*knut.nygaard@nhh.no*

*Erik Ø. Sørensen*  
*Norwegian School of Economics and*  
*Business Administration*  
*Bergen / Norway*  
*erik.sorensen@nhh.no*

*Bertil Tungodden*  
*Norwegian School of Economics and*  
*Business Administration*  
*Bergen / Norway*  
*bertil.tungodden@nhh.no*

May 27, 2011

Thanks to Tore Ellingsen, Alvin E. Roth, and Jean-Robert Tyran for very useful comments. We are grateful for excellent research assistance by Sigbjørn Birkeland, Lise Gro Bjørnsen, Marit Dolve, Sunniva Pettersen Eidsvoll, Sebastian Fest, Daniel Frøyland, Morten Grindaker, Siril Kvam, Jørgen Krog Sæbø, and Silje Sandstad. The project was financed by support from the Research Council of Norway, research grants 157208 and 185831, and the Chr. Michelsen's Gift To The Nation Fund.

The classical approach to the study of social preferences in economics has been to conduct experiments on students in the lab. Among the papers published on social preferences in the top five economics journals from 2000 to 2010, only four out of 24 papers reported from experiments on non-student populations, and only two of the papers reported from experiments done outside the lab.<sup>1</sup> The focus on students may not necessarily be a weakness of this research approach, in fact it has been argued that students often are the perfect starting point for studying social preferences (Gächter, 2010). Students are typically cognitively sophisticated and they therefore rather easily grasp the nature of distributive decision problems, which reduces noise and enables the researchers to identify the underlying preference structure generating the observed choice patterns.

Still, there has been a growing interest in the generality of the findings on students (Falk and Heckman, 2009; Henrich, Heine, and Norenzayan, 2010). Prominently, Henrich, Boyd, Bowles, Camerer, Fehr, Gintis, and McElreath (2001), reporting from an economic experiments on 15 small-scale societies exhibiting a wide variety of economic and cultural conditions, show that social preferences matter for subject pools very different from the standard student groups, and more recent papers have investigated the role of social preferences in other non-student groups (Bellemare, Kröger, and van Soest (2008); Belot, Miller, and Duch (2010); Fehr and List (2004), among others). None of these studies, however, have looked at whether students can serve to identify the motivational forces present in society at large, which typically would be what economists are interested in when studying markets and political institutions. The prevalence of social preferences may fundamentally change the working of markets (Dufwenberg, Heidhues, Kirchsteiger, Riedel, and Sobel, 2011) and the outcome of political processes (Alesina and Angeletos, 2005), and thus it is of great importance to understand their role in the general population.

We report from an experiment that compares the lab behavior of students and a nationally representative adult population.<sup>2</sup> To our knowledge, this is the first study of social preferences that brings a nationally representative adult population into the lab, and we believe that such an endeavor is important for gaining further understanding of the extent to which findings from lab experiments on students also apply more generally to the population at large. The fact that both groups take part in exactly the same lab experiment enables us to compare the behavior of students and a representative population in identical choice environments where they face same level of scrutiny and monitoring (Levitt and List, 2007), which makes observed differences in behavior informative of differences in underlying social preferences.

We also investigate the role of different student populations in lab experiments. Eight

---

<sup>1</sup>The calculations are based on all issues of *American Economic Review*, *Econometrica*, *Journal of Political Economy*, *Quarterly Journal of Economics*, and *Review of Economic Studies* in the period 2000-2010; see the appendix for a list of the 23 papers.

<sup>2</sup>Falk, Meier, and Zehnder (2011) presents an interesting related analysis, which compares the behavior of students and a sample from the general population in a trust game conducted via mail correspondence.

of the 24 papers published in the top five economics journals from 2000 to 2010 reported from experiments on students in economics, whereas nine papers relied on other student groups or did not report detailed background information on the students. As highlighted by the debate between Engelmann and Strobel (2004, 2006) and Fehr, Naef, and Schmidt (2006), the choice of student sample may matter fundamentally in the study of social preferences. In particular, Fehr et al. (2006) report results suggesting that the efficiency motive is especially salient among students of economics, who have been trained in the idea that efficiency is desirable, whereas equality appears to be of major importance for non-economists (ranging, in their study, from students of various other disciplines to low-level employees of banks and financial institutions).<sup>3</sup> We complement this debate by also investigating whether students in economics or students in other disciplines are closer to the behavior of a representative population in society.

Social preferences may differ fundamentally across economic environments. Fehr et al. (2006) argue that equality is more important in strategic games than in non-strategic games, but underline that better understanding of the functioning of different motivational forces in different environments is needed. The present study contributes to this by comparing the behavior of different groups of students and a nationally representative population both in a dictator game (a non-strategic environment) and in a generalized trust game (a strategic environment), where we focus on the relative importance of equality, efficiency and reciprocity in motivating the participants' behavior.<sup>4</sup>

Our study shows that the representative group differs fundamentally from the students both in their level of selfishness and in the relative importance assigned to different moral motives. First, the representative group gives away 52% more than the student group in the dictator game and returns 43% more in the trust game. Second, in the trust game, we find that the efficiency motive is stronger among representative males than among students, whereas representative females do not assign importance to efficiency. Third, the concern for equality expressed in the dictator game carries over to the return decision in the trust game for representative males and students. Among representative females, however, reciprocity concerns crowd out a concern for equality in a strategic environment.

The comparison of the student group and the representative group also illustrates the potential danger of studying gender differences in society at large on the basis of a selected group such as students. In our student group, males and females assign the same relative importance to the different moral motives, whereas males and females in the representative group differ fundamentally in their moral motivation. Finally, we show

---

<sup>3</sup>See also Fisman, Kariv, and Markovits (2009) for a study of how training in economics may affect the concern for efficiency.

<sup>4</sup>The relative importance of different moral motives have been studied in a number of related experiments, see among others Andreoni and Miller (2002); Charness and Rabin (2002); Cappelen, Drange Hole, Sørensen, and Tungodden (2007); Cappelen, Moene, Sørensen, and Tungodden (forthcoming); Engelmann and Strobel (2004); Fehr et al. (2006); Fisman, Kariv, and Markovits (2007); Konow (2000).

that students in economics and students in other disciplines mainly differ in their level of selfishness, where non-economics students are less selfish than students in economics and thus make choices more in line with what we observe in the representative group.

The paper is organized as follows: Section 1 describes the sampling procedure; section 2 provides details on the experimental design; section 3 and section 4 report results from the dictator game and the trust game, respectively; section 5 concludes.

## 1 Samples and participants

Of the 375 participants in our study, 120 were students at the Norwegian School of Economics and Business Administration (NHH) and 119 were students of subjects in the humanities, natural sciences, and social sciences (other than economics) at the University of Oslo (UiO). The gender distribution among the participating students is in line with the gender distribution in the student samples that we recruited from. The remaining 136 participants were recruited from a representative sample of the Norwegian population. Two criteria determined the selection of the non-student sample. First, we wanted this sample to be representative of the Norwegian population with respect to age, gender, employment and income. Second, as we wanted all participants in our study to participate in a lab experiment at NHH, we considered it important that non-student participants did not have to travel too far. Based on data from Statistics Norway, we established that the population living in the 27 basic statistical units closest to NHH is representative for the population in Norway with respect to the selected dimensions.<sup>5</sup> This region includes parts of the second largest city in Norway as well as less populated rural farming areas.

Following the approval of the experiment by both the Norwegian Social Science Data Services (“Norsk samfunnsvitenskaplig datatjeneste”) and the Norwegian Public Register (“Norsk Folkeregister”), EDB Infobank drew a random subset of 1000 persons from our representative population. We then randomly selected 460 individuals from this subset to be invited to take part in the experiment. Each individual received a personal letter inviting them to participate in a research project involving economic choices, but they were not informed about the details or the purpose of the experiment. The letter also gave the date and time of the session to which they had been assigned.<sup>6</sup> The response rate is similar across the three subject groups: for the representative group the response rate

---

<sup>5</sup>A basic statistical unit is the smallest geographical unit used by Statistics Norway.

<sup>6</sup>In the invitation they were told that they would receive 300 NOK (45 USD) in participation compensation for an experiment that would last for about one hour, and that they could earn more during the experiment. The student subjects received a similar invitation by email and were told that they would receive 100 NOK in participation compensation. The difference in participation compensation was based on the additional travel time and cost that people in the representative population would incur relative to the students in order to participate. Student sessions were held during the day, and representative sessions in the evening.

was 30.2%, for the NHH student group 28.6%, and for the UiO student group 26.2%.<sup>7</sup>

Table 1 reports the characteristics of the non-student group relative to the representative sample and the Norwegian population at large. The data for Norway and the sample population were collected from Statistics Norway. The participants self-reported age, gender, and employment, but not income.<sup>8</sup> We collected the income data for the participants from a publicly available tax return database. Since the participants were anonymous in the experiment, we cannot link income data and experimental data at the individual level. We observe that the non-student group is fairly representative in terms of employment, gender, income, and age, with females being slightly overrepresented. Hence, even though the non-student group may not be fully representative relative to other characteristics, we retain the label representative in describing these participants.

## 2 Design

All interaction between the participants was anonymous and through a web-interface developed for the experiment.<sup>9</sup> In the first part of the experiment, the participants played standard dictator games. Each participant was involved in four dictator games, two as dictator and two as passive recipient, each time randomly paired with another participant in the same session. The endowment  $e$  in each game was either 500 NOK or 1000 NOK. The dictator was asked to choose an amount  $y$  for the other person and  $(e - y)$  for himself. The choice set of the dictator was limited to amounts divisible by 25 NOK. The participants were not informed about the outcome in the situations where they were recipients until the end of the experiment.

In the second part of the experiment, the participants completed ten trust games, five as sender and five as responder, each time randomly paired with another participant in the same session. In each trust game, both the sender and the responder were allocated an endowment  $e_i \in \{100, 200, 300\}$ , for  $i = 1, 2$ , where the sum of the endowments for each pair of players was always 400 NOK. In addition, there was a multiplier of  $m_1$  on the sent amount and a multiplier  $m_2$  on the returned amount, where  $m_i \in \{1, 2, 4\}$ , for  $i = 1, 2$ , and the product of the two multipliers in each situation was 4.

All participants first completed their decisions as senders. In each situation, before they made a decision, they were informed about the vector  $(e_1, e_2, m_1, m_2)$ , and the sender then decided whether to send an amount  $y_1 \leq e_1$  of the endowment to the responder. The

---

<sup>7</sup>10 of the invitations to the representative subset were returned to the research group because of wrong address. The response rate was thus 136 out of 450. The total number of second year NHH students was 420, of which 120 participated in our study. At UiO, we invited students in seven particular bachelor-level courses across the academic disciplines: The humanities (history; art studies), the natural sciences (mathematics; biology; physics), and the social sciences (social anthropology; political science). The total student pool at UiO consisted of 454 students, of which 119 participated in our study.

<sup>8</sup>Two students did not report gender and thus are excluded from the analysis

<sup>9</sup>Instructions were given in Norwegian. See the appendix for an English translation of the instructions.

responder would then receive  $y_2 = m_1 y_1$ . After completing all five sender decisions, each participant was presented with an overview of their choices and given the opportunity to revise each of them. All participants then completed their decisions as responders. In each situation, the responder was informed about the vector  $(e_1, e_2, m_1, m_2, y_1, y_2)$ , and the responder then decided the amount  $y_3 \leq e_2 + y_2$  to return to the sender. The sender received  $y_4 = m_2 y_3$ . When the responders had completed their decisions in all the five situations, they were presented with an overview of their choices and given the opportunity to revise each of them. The total payoff for the sender ( $\pi_1$ ) and the responder ( $\pi_2$ ) in a particular game is given by:

$$\begin{aligned}\pi_1 &= e_1 - y_1 + m_2 y_3 = e_1 - y_1 + y_4, \\ \pi_2 &= e_2 + m_1 y_1 - y_3 = e_2 + y_2 - y_3.\end{aligned}$$

The choice set of both players was limited to amounts divisible by 25 NOK.

At the end of the experiment, for each person and with equal probability, one of the games in which the participant had been involved was randomly drawn to determine actual payment. The final payment procedure ensured that neither the participants nor the research team were in a position to identify how much each participant earned in the experiment.

### 3 The dictator game

The distributive situation in the dictator game has three important characteristics that limit the possible motives the dictator may have for sharing. First, the other participant is unable to respond to the decision made by the dictator, which implies that sharing cannot be motivated by self-interest. Second, the total income is fixed, which implies that sharing cannot be motivated by efficiency concerns. Third, the dictator does not respond to a decision made by the other participant, which implies that sharing cannot be motivated by reciprocal concerns.

We interpret the amount given as a measure of the extent to which a concern for equality motivates the dictator to act non-selfishly.<sup>10</sup> Figure 1 provides a histogram of the share given for the subject groups by gender, the average share given is reported in Table 2. We observe from the upper part of the figure that there are large differences between students and representatives. Whereas the mode among students is to take everything for themselves, the mode among representatives is to share equally. On average, representative males give away almost twice as much as student males (40.3% versus 22.6%,  $p < 0.001$ ), and representative females give away 30% more than student females

---

<sup>10</sup>There are only small differences in share given for 500 NOK and 1000 NOK; 27.9% versus 26.2% for students, 41.1% versus 41.3% for representatives.

(41.7% versus 32.2%,  $p < 0.001$ ).<sup>11</sup> The representative group is therefore clearly less selfish than the students. As shown in Table 3, age and employment are not statistically important in explaining the behavior of the representative group.

The lower part of Figure 1 compares the two different student groups, where we observe that a larger share of economics students take everything for themselves, both among males and among females. Table 2 and Table 3 show that this pattern also holds for average share given away, economic students are on average more selfish than non-economics students (19.8% versus 26.2% for males,  $p = 0.072$ ; 26.9% versus 36.2% for females,  $p = 0.005$ ). The behavior of non-economics students is thus closer to the behavior of the representative group, even though the non-economics students also give away less than the representative group ( $p < 0.001$  for males,  $p = 0.036$  for females).

Furthermore, we observe that there are statistically significant gender differences in average share given away in both student groups (19.8% versus 26.9% for economics students,  $p = 0.035$ ; 26.2% versus 36.4% for non-economics students,  $p = 0.004$ ), but not in the representative group (40.2% versus 41.7%,  $p = 0.608$ ).<sup>12</sup> This illustrates the danger of studying gender differences in society at large on the basis of a very selected subject group, such as students.

To summarize, the dictator game provides clear evidence of non-selfish behavior in the representative group, and shows that the great importance of equality may be underestimated if we focus on student groups. The behavior of the non-economics students is closer to the behavior of the representative group, but in both student groups we find a significant gender difference that is not present in the representative group.

## 4 The trust game

We now turn to a study of the behavior in the trust game, where the participants potentially may be motivated by efficiency, equality and reciprocity considerations.

Figure 2 and Figure 3 provide histograms for share sent and returned for both subject groups by gender, the average shares are reported in Table 2. We observe that share sent is almost the same for the representative group and the student group (51.7% versus 54.1%), but with some gender differences. The mode among student males is to send everything and on average they send more than representative males, whereas representative females on average send less than student females. In both cases, however, we observe large standard errors and the differences between students and representatives are not statistically significant ( $p = 0.100$  for males and  $p = 0.188$  for females). Comparing the two student

---

<sup>11</sup>In all tests reported in the paper, we have corrected for repeated sampling of individuals using a clustered sandwich estimator of the standard errors.

<sup>12</sup>The same pattern holds if we consider the share of participants taking everything for themselves. There is a statistically significant difference between males and females among students (36.4% versus 17.7%,  $p = 0.013$ ), but not among representatives (5.0% versus 3.0%,  $p = 0.517$ ).



groups, we observe that the economics students and non-economics students are equally trusting in their behavior, we do not observe any statistically significant differences in share sent (62.0% versus 62.0% for males,  $p = 0.993$ ; 42.9% versus 47.2% for females,  $p = 0.399$ ). We do, however, again observe a statistically significant gender differences in average share sent in both student groups (62.0% versus 42.9% for economics students,  $p = 0.001$ ; 62.0% versus 47.2% for non-economics students,  $p = 0.003$ ), but not in the representative group (54.2% versus 50.2%,  $p = 0.390$ ).

In the return decision, we observe a huge difference in behavior between male students and male representatives. Male students return on average a much lower share (19.7% versus 36.5%,  $p < 0.001$ ), and the share of male students returning nothing is three times that of representative males (32.3% versus 11.0%,  $p < 0.001$ ). In contrast, we do not observe a statistically significant difference between female students and female representatives in average share returned (22.5% versus 25.9%,  $p = 0.117$ ). This is due to female non-economics students returning slightly more than female representatives, and also significantly more than all the other student groups. If we consider the share of females returning nothing, however, we find the same difference between students and the representative group as among males (17.9% versus 5.8%,  $p < 0.001$ ).

In comparing the two student groups, we only observe a statistically significant difference in share returned among females, where female economics students return less than female non-economics students (16.1% versus 27.4%,  $p < 0.001$ ). In fact, the share of female economics students returning nothing is close to the share of male economics students returning nothing (27.5% versus 35.4%,  $p=0.184$ ), and significantly higher than among female non-economics students (27.5% versus 10.4%,  $p < 0.001$ ).

Both the send decision and return decision may be influenced by self-interest considerations and moral considerations, but the return decision provides the most direct test of how the participants trade off selfishness and different moral motivations in a strategic environment. The efficiency motive comes into play through the multiplier on the returned amount, which varies from 1 to 4. When the multiplier is 1, there is no efficiency argument for returning anything, whereas a multiplier of 2 or 4 provides a strong efficiency argument for returning everything. The reciprocity motive comes into play because the responder may want to reward participants who have sent a large share of the endowment. Both these motives, however, may interact with the concern for equality in the return decision; the equality motive may dampen the willingness to act on the efficiency motive, and it may generate reciprocal behavior independent of the reciprocity motive.

To capture the extent to which a concern for equality motivates the return decision, we calculate the amount,  $y_3^{target}$ , that each participant has to return to achieve the distribution he or she selected as dictator.<sup>13</sup> We do so by first solving the following equation

---

<sup>13</sup>A similar approach is used in Ashraf, Bohnet, and Piankov (2006).

for  $y_3^*$ ,

$$\frac{\pi_1}{\pi_1 + \pi_2} = \frac{(e_1 - y_1 + m_2 y_3^*)}{(e_1 - y_1 + m_2 y_3^*) + (e_2 + m_1 y_1 - y_3^*)} = s^{dictator},$$

where  $s^{dictator}$  is the share given to the other person in the dictator game.<sup>14</sup> The return amount has to be non-negative, and thus we define,

$$y_3^{target} = \max(0, y_3^*). \quad (1)$$

In the following, we use  $y_3^{target}$  to control for the importance of the equality motive in the return decision.

Table 4 reports regressions of share returned by gender on the three other-regarding motives, reciprocity (share sent), equality (share returned target), and efficiency (multiplier return). We observe some striking differences between males and females in the representative group. Representative males assign great importance to efficiency concerns, the point estimate of the multiplier is 9.2% and thus the estimated difference in share returned between situations with a multiplier of 1 and 4 is 27.6%, whereas the share returned among representative females is not at all sensitive to the multiplier.<sup>15</sup> Representative females exhibit a strong reciprocal motivation in the return decision, but not a concern for equality as expressed in the non-strategic environment.<sup>16</sup> In contrast, the reciprocal motive does not seem to have any force among representative males, who also in the strategic environment assign importance to equality considerations.

A very different picture emerges for the student group. First, students assign far less importance to efficiency than representative males, but much more importance to equality than female representatives. Second, the reciprocity motive has some motivational force among the students, but is less prominent than among female representatives. Third, there are no statistically significant gender differences in the student group, which is in stark contrast to what we find in the representative group. In sum, the trust game shows that the social preferences of representatives and students group are very different.

If we now compare the student groups, we observe that the estimates are strikingly similar. Both among economics students and non-economics students, the equality motive is highly significant. Efficiency, on the other hand, plays a minor role for all student

---

<sup>14</sup>In calculating  $s^{dictator}$ , we take, for each participant, the average share given in the dictator game.

<sup>15</sup>It is interesting to compare this finding to Almås, Cappelen, Sørensen, and Tungodden (2010), who report results from a social preference lab experiment done on a group of children from 5th grade to 13th grade that is fairly representative for these age groups in Norway. They find that a concern for efficiency mainly develops among males throughout adolescence, which maps closely to the male-specific focus on efficiency in the representative group. Martinsson, Nordblom, Rützler, and Sutter (2011) also report a similar gender difference in concern for efficiency in a study of social preferences among children in Sweden and Austria.

<sup>16</sup>This is in line with the finding in Croson and Gneezy (2009) that the social preferences of females are more situationally specific than those of men.

groups, and it is only statistically significant for male economics students. The reciprocity motive also seem to play a similar role in all student groups, even though it is not statistically significant for male non-economics students. Overall, the small differences between the student groups suggest that they assign the same relative importance to the different moral motives.

## 5 Conclusion

Our study demonstrates clearly that student subject groups may not be representative of the social preferences in society at large. They differ fundamentally from a representative group of non-students both in their level of selfishness and in the relative importance assigned to different moral motives. Moreover, we show that while there are few significant gender differences in the student groups, males and females in the representative group differ fundamentally in their moral motivation. Finally, we observe that economics students and non-economics students differ in their level of selfishness, but not in the relative importance assigned to different moral motives.

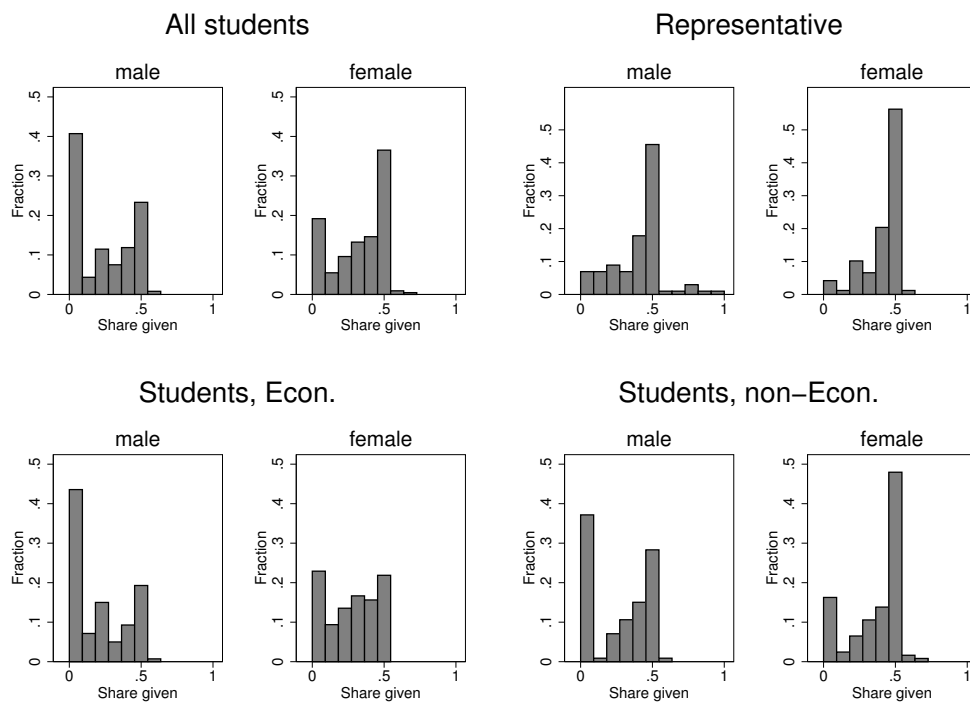
We find that both equality and efficiency are important motivational forces among representative males, whereas representative females seem to move from a concern for equality in non-strategic environments to a focus on reciprocity in economic environments. The fact that all three motives play a role in explaining lab behavior of a group that is representative for the Norwegian population suggests that these motives are important also when analyzing economic and social phenomena in society at large.

## References

- Alesina, Alberto and George-Marios Angeletos (2005). “Fairness and redistribution,” *American Economic Review*, 95(4): 960–980.
- Almås, Ingvild, Alexander W. Cappelen, Erik Ø. Sørensen, and Bertil Tungodden (2010). “Fairness and the development of inequality acceptance,” *Science*, 328(5982): 1176–1178.
- Andreoni, James and John Miller (2002). “Giving according to GARP: an experimental test of the consistency of preferences for altruism,” *Econometrica*, 70(2): 737–753.
- Ashraf, Nava, Iris Bohnet, and Nikita Piankov (2006). “Decomposing trust and trustworthiness,” *Experimental Economics*, 9(3): 193–208.
- Bellemare, Charles, Sabine Kröger, and Arthur van Soest (2008). “Measuring inequity aversion in a heterogeneous population using experimental decisions and subjective probabilities,” *Econometrica*, 76(4): 815–839.
- Belot, Michèle, Luis Miller, and Raymond Duch (2010). “Who should be called to the lab?” Nuffield Centre for Experimental Economics, Discussion Paper 2010-001.
- Cappelen, Alexander W., Astri Drange Hole, Erik Ø. Sørensen, and Bertil Tungodden (2007). “The pluralism of fairness ideals: An experimental approach,” *American Economic Review*, 97(3): 818–827.
- Cappelen, Alexander W., Karl O. Moene, Erik Ø. Sørensen, and Bertil Tungodden (forthcoming). “Needs vs entitlements: An international fairness experiment,” *Journal of European Economics Association*.
- Charness, Gary and Matthew Rabin (2002). “Understanding social preferences with simple tests,” *Quarterly Journal of Economics*, 117(3): 817–869.
- Croson, Rachel and Uri Gneezy (2009). “Gender differences in preferences,” *Journal of Economic Literature*, 47(2): 1–27.
- Dufwenberg, Martin, Paul Heidhues, Georg Kirchsteiger, Frank Riedel, and Joel Sobel (2011). “Other-regarding preferences in general equilibrium,” *Review of Economics and Statistics*, 78(2): 613–639.
- Engelmann, Dirk and Martin Strobel (2004). “Inequality aversion, efficiency, and maximin preferences in simple distribution experiments,” *American Economic Review*, 94(4): 857–869.

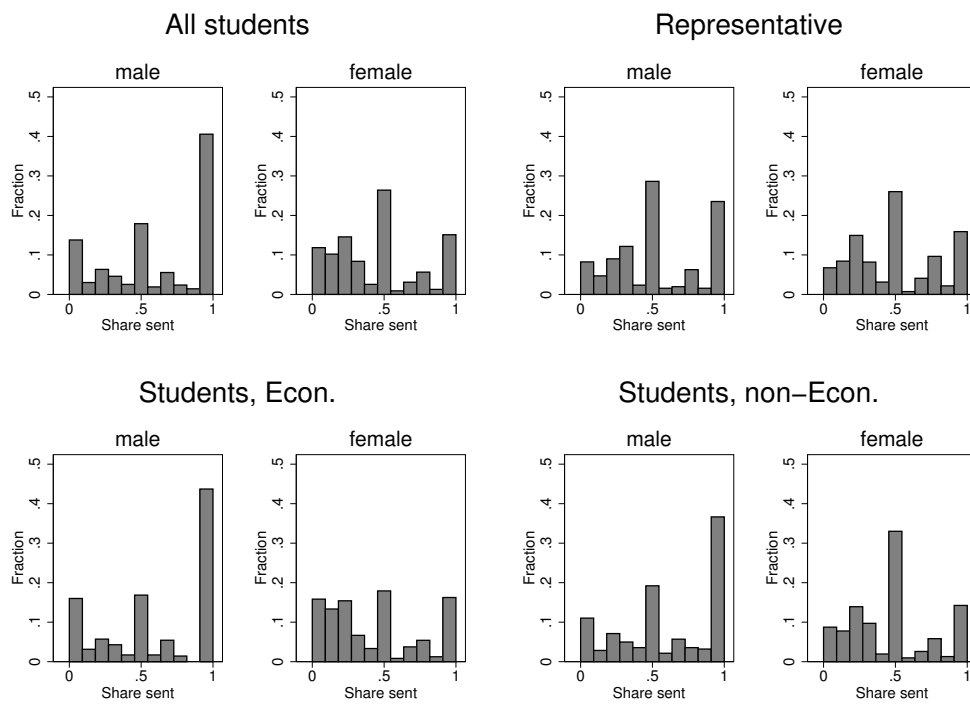
- Engelmann, Dirk and Martin Strobel (2006). “Inequality aversion, efficiency, and maximin preferences in simple distribution experiments: Reply,” *American Economic Review*, 96(5): 1918–1923.
- Falk, Armin and James J. Heckman (2009). “Lab experiments are a major source of knowledge in the social sciences,” *Science*, 326(5952): 535–538.
- Falk, Armin, Stephan Meier, and Christian Zehnder (2011). “Did we overestimate the role of social preferences? The case of self-selected student samples,” IZA Discussion paper No. 5475.
- Fehr, Ernst and John A. List (2004). “The hidden costs and returns of incentives - trust and trustworthiness among CEOs,” *Journal of European Economic Association*, 2(5): 743–771.
- Fehr, Ernst, Michael Naef, and Klaus M. Schmidt (2006). “Inequality aversion, efficiency, and maximin preferences in simple distribution experiments: Comment,” *American Economic Review*, 96(5): 1912–1917.
- Fisman, Raymond, Shachar Kariv, and Daniel Markovits (2009). “Exposure to ideology and distributional preferences,” mimeo.
- Fisman, Raymond J., Shachar Kariv, and Daniel Markovits (2007). “Individual preferences for giving,” *American Economic Review*, 97(5): 1858–1876.
- Gächter, Simon (2010). “(Dis)advantages of student subjects: what is your research question?” *Behavioral and Brain Sciences*, 33(2-3): 92–93.
- Henrich, Joseph, Robert Boyd, Samuel Bowles, Colin Camerer, Ernst Fehr, Herbert Gintis, and Richard McElreath (2001). “In search of homo economicus: Behavioral experiments in 15 small-scale societies,” *American Economic Review*, 91 (2): 73–78.
- Henrich, Joseph, Steven J. Heine, and Ara Norenzayan (2010). “The weirdest people in the world?” *Behavioral and Brain Sciences*, 33(2-3): 61–83.
- Konow, James (2000). “Fair shares: Accountability and cognitive dissonance in allocation decisions,” *American Economic Review*, 90(4): 1072–1091.
- Levitt, Steven D. and John A. List (2007). “What do laboratory experiments measuring social preferences reveal about the real world?” *The Journal of Economic Perspectives*, 21(2): 153–174.
- Martinsson, Peter, Katarina Nordblom, Daniela Rützler, and Matthias Sutter (2011). “Social preferences during childhood and the role of gender and age - an experiment in Austria and Sweden,” *Economics Letters*, 110: 248–251.

Figure 1: Histogram of share given in the dictator game



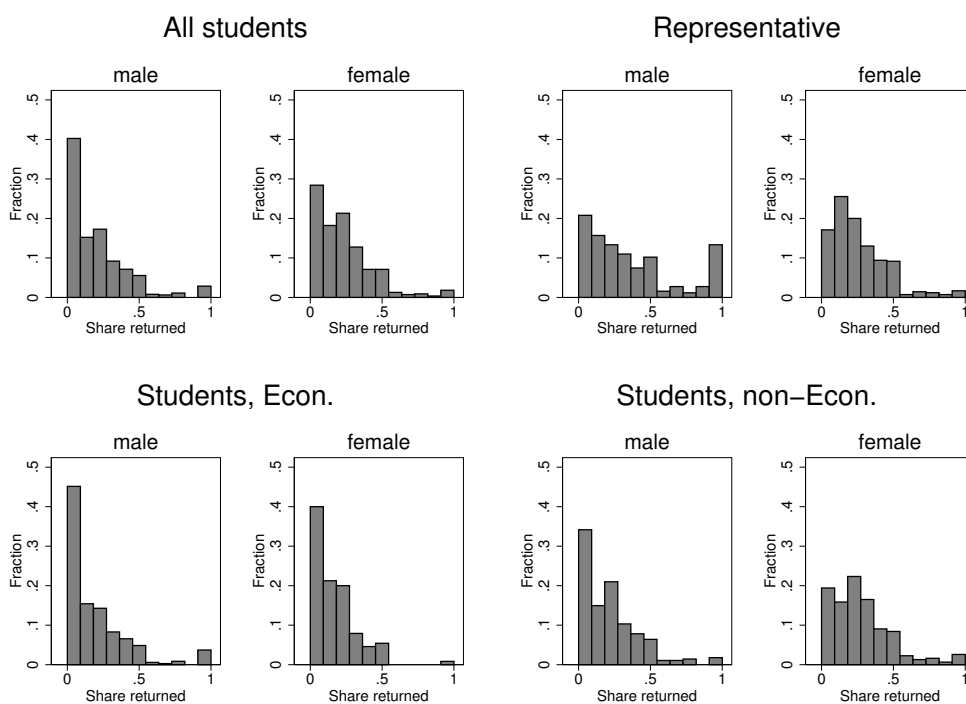
*Notes:* The figure reports, for each subgroup, the distribution of the share given in the dictator game. Each participant acts as the dictator in two dictator game situations, and each dictator game situation enters here as an independent observation.

Figure 2: Histogram of share sent in the trust game



*Notes:* The figure reports, for each subgroup, the distribution of the share sent in the trust game. Each participant acts as the sender in five trust game situations, and each trust game situation enters here as an independent observation.

Figure 3: Histogram of share returned in the trust game



*Notes:* The figure reports, for each subgroup, the distribution of the share returned in the trust game. Each participant acts as the responder in five trust game situations, and each trust game situation enters here as an independent observation.



Table 1: Age, gender, employment and income distributions for the non-student group, the sample population, and the Norwegian population

	Non-student group	Sample population	Norway
<b>A. Age</b>			
17-30	25.6	26.8	25.5
31-40	14.3	23.7	22.3
41-50	30.1	19.2	20.6
51-60	16.5	16.5	19.1
61-70	13.5	13.8	12.5
<b>B. Gender</b>			
Male	38.6	48.4	49.6
Female	61.4	51.6	50.4
<b>C. Employment</b>			
Private sector	55.6	58.1	63.8
Public sector	44.4	41.9	36.2
<b>D. Income</b>			
0-99,999	20.9	23.5	24.7
100,000-199,999	24.8	25.7	29.8
200,000-299,999	27.1	24.2	24.8
300,000-399,999	15.5	11.6	10.7
400,000-499,999	6.2	5.8	4.1
500,000 and over	5.4	9.3	5.8

*Notes:* **Non-student group:** Age, gender, and employment are self-reported by the participants in the experiment. Income is taxable income in NOK, including labor income and capital gains over the year, net of all deductibles including interest payments; collected from publicly available tax return database (Year: 2005). **Sample population and Norway:** Age and gender are collected from Statistics Norway (Year: 2006). Employment is collected from Statistics Norway (Year: 2001). Income is collected from Statistics Norway (Year: 2004).

Table 2: Share given in the dictator game, share sent and share returned in the trust game

	Students, Econ.		Students, non-Econ.		All students		Representative	
	Male	Female	Male	Female	Male	Female	Male	Female
<b>A. Share given, dictator game</b>								
Mean	0.198	0.269	0.262	0.364	0.226	0.322	0.403	0.417
	(0.023)	(0.024)	(0.027)	(0.022)	(0.018)	(0.017)	(0.024)	(0.012)
<b>B. Share sent, trust game</b>								
Mean	0.620	0.429	0.620	0.472	0.620	0.453	0.542	0.502
	(0.040)	(0.041)	(0.040)	(0.029)	(0.029)	(0.025)	(0.038)	(0.027)
<b>C. Share returned, trust game</b>								
Mean	0.186	0.161	0.210	0.274	0.197	0.225	0.365	0.259
	(0.021)	(0.016)	(0.019)	(0.021)	(0.014)	(0.015)	(0.037)	(0.016)
<i>n</i>	70	48	57	62	127	110	52	84

*Notes:* The table reports, for each subgroup, the average share given in the dictator game, average share sent in the trust game, and average share returned in the trust game ( $n$  is the number of individuals in each subgroup). Each individual acts as dictator in two dictator games, as sender in five trust games, and as responder in five trust games. Standard errors corrected for clustering on individuals in parentheses.

Table 3: Regressions of share given in the dictator game

	Students, Econ.		Students, non-Econ.		All students		Representative	
	Male	Female	Male	Female	Male	Female	Male	Female
Above 30 years old							0.049 (0.053)	0.042 (0.036)
Working, public sector							0.028 (0.086)	-0.022 (0.037)
Working, private sector							-0.015 (0.077)	-0.007 (0.034)
Student, Econ.					-0.064 (0.036)	-0.095 (0.033)		
Constant	0.198 (0.023)	0.269 (0.024)	0.262 (0.027)	0.364 (0.022)	0.262 (0.027)	0.364 (0.022)	0.367 (0.077)	0.395 (0.036)
$N$	140	96	113	123	253	219	99	159
$R^2$	0.000	0.000	0.000	0.000	0.024	0.062	0.021	0.020

*Notes:* The table reports results from OLS regressions of the share given in the dictator game. All students are coded as not working and as below 30 years old. The dummy variable “Above 30 years old” is equal to one if the dictator in the situation is above 30 years old, otherwise zero. There are two dummies for working status, public sector employment and private sector employment. The excluded working status category is “not working”. Standard errors corrected for clustering on individuals reported in parentheses.

Table 4: Regressions of share returned in the trust game

	Students, Econ.		Students, non-Econ.		All students		Representative	
	Male	Female	Male	Female	Male	Female	Male	Female
Share sent	0.095 (0.036)	0.059 (0.030)	0.058 (0.059)	0.086 (0.040)	0.081 (0.031)	0.074 (0.025)	-0.088 (0.064)	0.150 (0.057)
Share returned target	0.659 (0.101)	0.522 (0.110)	0.596 (0.112)	0.388 (0.142)	0.627 (0.073)	0.431 (0.099)	0.713 (0.149)	0.122 (0.138)
Multiplier return	0.023 (0.010)	0.011 (0.011)	0.020 (0.016)	0.023 (0.013)	0.022 (0.009)	0.017 (0.009)	0.092 (0.020)	0.007 (0.014)
Above 30 years old							0.145 (0.095)	0.035 (0.033)
Working, public sector							-0.061 (0.102)	-0.008 (0.036)
Working, private sector							-0.139 (0.100)	0.009 (0.038)
Student, Econ.					-0.005 (0.025)	-0.087 (0.028)		
Constant	0.031 (0.028)	0.047 (0.025)	0.066 (0.036)	0.108 (0.042)	0.048 (0.025)	0.121 (0.032)	0.038 (0.102)	0.110 (0.061)
Observations	350	240	281	309	631	549	250	395
$R^2$	0.180	0.229	0.163	0.110	0.174	0.209	0.268	0.098

*Notes:* The table reports the results from OLS regressions of the share returned in the trust game. Share returned target is defined by (1). The multiplier varies from 1 to 4. The dummy variable “Above 30 years old” is equal to one if the dictator in the situation is above 30 years old, otherwise zero. There are two dummies for working status, public sector employment and private sector employment. The excluded working status category is “not working”. Standard errors corrected for clustering on individuals reported in parentheses.