Friendships and Favoritism on the Schoolground - A Framed Field Experiment*

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Abstract

This study presents evidence from a field experiment on the prevalence of favoritism at school. Children compete in teams in a tournament in a real effort experiment with two rounds. They report which group member they prefer to do the task in the second round, providing them with a small privilege. Using information about their social network and their individual performance, we are able to identify the importance of friendship ties. We find that friendships are very important for all age groups. Performance is an important criterion for the older children, but not for the younger ones. While this suggests that the children favor their friends, we also find an offsetting effect: children who are favored increase their subsequent performance. This means that, what looks like favoritism *ex ante*, may actually maximize performance *ex post*.

JEL Classification Numbers: D630, D640, J130, J150

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1 Introduction

A growing body of controlled field and laboratory experiments shows that "being socially well-connected" matters in a variety of contexts. For example, Goeree et al. (2007) find that social distance is *the* most important determinant of offers in a dictator game among teenagers. They give substantially more to their friends than to others. Similar results are found for college students by Mobius et al. (2004) and Brañas-Garza et al. (2006). Interestingly, this tendency to favor friends or close relations also seems to extend to situations where differences in performance and merit exist, thereby being a form of *unfair* favoritism or nepotism. For example, Brandts

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and Sola (2009) find in a laboratory gift exchange setting that subjects allocate more money to friends than anonymous players, and friends return substantially more, even if the friend has a lower efficiency[1]. Bandiera et al. (2009a) provide evidence using an experimental design in a fruit-picking firm that managers tend to favor workers who are socially close to them when it is costless to do so but this form of favoritism disappears once it becomes costly to the managers. Finally, Bagues and Esteve-Volart (2009) find evidence of nepotism practices in the recruitment of top civil servants in Spain.

The implications of favoritism for efficiency are a priori not clear-cut. In principle, there can be benefits of privileging members from your own social network: Personal relations possibly overcome informational asymmetries (Granovetter, 1973), and peer pressure effects in networks can be welfare improving (Calvó-Armengol and Jackson, 2009; Kandel and Lazear, 1992). Also, it could be that friends who are favored do reciprocate the favor in a way that improves efficiency, for example, a friend may put more effort in the task for which he has been hired. These mechanisms are important to stress because it means that in order to establish the true cost of favoritism, one needs to observe performance *ex post*, that is, *after* the favor has been attributed. The common practice in the literature on discrimination and favoritism practices is to control for measures of productivity or merit *ex ante,* thereby ignoring this possible effect. Of course the main challenge is that one does usually not observe the counterfactual for the productivity ex post, that is, one does only observe the productivity of those who have been chosen.

This study investigates favoritism practices among school children, in a framed field experimental setting. Schools are fascinating environments for economists to study because performance, incentives and social ties interplay on a daily basis. For example, children are regularly asked to choose between their peers and form teams to compete against each other – typically in gymnastic lessons. Schools are one of the first places where children socialize and form friendship ties and, at the same time, are confronted to competitive incentives and systematic mapping of rewards to performance. This provides an ideal setting to study favoritism practices. Little is known about how favoritism arises in society and how it develops with age, and understanding the mechanisms through which these practices emerge may provide valuable insights in the nature of favoritism. Schools are often considered as teaching "life lessons", meaning that the school experience is likely to shape and affect behavior later on in life. There is a recent growing

[1] Efficiency is defined as the factor by which the amount sent to the receiver is multiplied.

interest in the economics literature in the behavior of children in economic decisions (Harbaugh et al., 2001, 2007; Bernhard et al., 2006; Benenson et al. 2007; Häger et al., 2008). Well-known games such as the dictator game, the ultimatum game and the trust game have been played with children with the objective of understanding the emergence of rationality, attitudes and norms that have been found to play a large role in decisions at adult age, such as altruism, fairness or strategic considerations. To our knowledge, we are the first to look at the issue of favoritism in the context of performance.

The study has two main goals: First, we wish to establish whether children tend to favor their friends over others and whether this differs across age groups. We carry out the experiment among two age groups of children: younger ones (6-8 years old) and older ones (10-12 years old)). Second, our experimental design enables us to distinguish between three possible mechanisms possibly driving favoritism practices: (1) altruism: Children may favor their friends because they truly want them to be better off, (2) social interaction: Children may favor their friends because they enjoy interacting with them or (3) reciprocity: Friends who are favored may be more likely to reciprocate the favor and, for example, put more effort into the task. This latter mechanism suggests there might be a "flip-side" to favoritism, one that is usually overlooked in empirical studies.

In order to identify favoritism practices, we carry out a controlled experiment, where performance is precisely measured and observed by everyone, and where the favor clearly provides a direct benefit to the person who is favored. Children are randomly assigned to teams of four children within their class and compete in a tournament. Teams are called up sequentially to participate to the experiment. In a first stage, the four team members are asked to perform the same task, simultaneously, which is to bring as many balls from one basket to another. This serves to measure performance (or merit) of every child, which is made observable to all children in the group. All four children earn a little gift for that first stage, independent of their performance. At the end of this first stage, we ask the children to indicate whom among the three other team members they would like to do the task a second time, for the benefit of the team. They do this privately by handing us cards. Children are told that participation in the second stage is also rewarded with a gift. Thus, the choice provides a clear privilege to the chosen child. One of the four decisions is then implemented at random, we tell the names of children that are chosen and by whom, and the task is done a second time. After all teams have been called up,

we publicly announce to the class who is the winning team.

A number of key aspects in the design allow us to determine the importance of friendship ties, and uncover the motives behind their importance. First, the random assignment of children to groups means that we have equally popular children assigned to groups where they have more or less friends. This enables us to identify the effect of a friendship tie, conditional on popularity. Second, children can give a friend a privilege by choosing him or her to play in the second round. This creates a potential trade-off between choosing a friend, or the child who deserves most to be chosen based on performance. Third, we are able to identify a flip side a favoritism by comparing the change in performance between the first and second rounds, and see how it relates to the existence of friendship ties in the team. Finally, we introduce two different treatments to distinguish between social interaction and other motives. In one treatment, children are asked to choose one child *with whom* they would like to do the task again for the benefit of the team, and in a second treatment, children are asked to choose one child who will perform the task again *on his own* for the benefit of the team. By varying whether the choosing child him or herself also plays in the second round, next to the chosen child, we can determine whether friends are chosen for the social interaction, i.e., the joy of playing together.

The data show some striking patterns. Choices are extremely biased towards friends. We find that a child is roughly 20 to 25 percentage points more likely to be selected by another child if they are friends, controlling for performance. Best friends are even more favored, and are between 30 and 45 percentage points more likely to be selected than children who are not friends. This is not just a tie-breaking rule: 60 percent of best friends are nominated despite not being best performer, against only 30 percent for non-best friends who are best performers in round 1. While it may not be too surprising that we find strong favoritism among the younger children, it is interesting to see that this persists when they grow older. On the other hand, we find that the weight given to past performance is very different for younger and older children. It plays no role at all for the younger ones, while it plays a large and significant role for older children. Importantly, performance becomes a distinctive selection criterium *in addition* to friendship, and not as a substitute for favoritism; favoritism does not reduce with age but friendship coefficients remain large.

A novel and interesting finding is that we find a positive side to favoritism in terms of productivity: Those who are chosen despite not being the one with the best performance, do

put more effort into the task relative to others. Favoritism is beneficial in terms of performance, rather than an impediment to the team's winning chances. Last, we find that in treatments where children had to select another child for the second round without participating him or herself in the next round, being friends becomes less important for the selection decision and completely disappears for older girls. This suggests that favoritism occurs at least partly because children like to "play with their friends".

Of course the extrapolation of these results to adult age is not straightforward. Nevertheless, while our results apply to children, the setting has a close resemblance to the labor market, where people often work in teams, and promotions can depend on social connections. This study sheds light on how favoritism possibly arises. We find that friendship ties are important already early on in life. Performance concerns seem to rise with age, but since favoritism is not detrimental to group performance, this may explain why it subsists over time and carry over to adult age. Thus, the positive flip side of favoritism may be the very reason why it survives and persists until adult age. However, it is not clear that the positive flip side is present in all settings. Bandiera et al. (2009a) find that favoritism diminishes once performance incentives are provided to managers. Our design imposes conditions that may be key for favoritism not to be detrimental: First, the nature of friendships is specific: school children interact with each other on a daily basis and are embedded in a long-term social network. Second, we chose a task where effort is adjustable and the favor could be reciprocated in a way that is beneficial for the team (as opposed to a private benefit to the person who has attributed the favor). These factors may be key to our results. For example, if production is mostly determined by the ability of its members, favoritism towards friends may result in an inefficient allocation of talent, and reduced productivity. On the other hand, if effort is the most important determinant of productivity, an inefficient allocation of talent may be outweighed by a higher overall effort in teams composed of friends. If these mechanisms are still present a adult age, this may have interesting implications for the discretion given to managers to pick their team. [2].

The economic significance of favoritism overall is best illustrated, but not limited to, behavior in various types of firms and organizations. A large number of people do their work in teams.

[2] In this light, the practice of, for instance, *American Airlines* not to give any discretion to management in the assignment of flight attendants to routes, may have been suboptimal. As Milgrom (1988) argues, the airline cares little about the allocation. This can be interpreted as saying that ability is not of major importance for this type of work, in which case it may be optimal to form teams of friends, rather than allocate on the basis of factors such as seniority.

Such teams share at least two features with our experimental design: first, the team has a common objective, with a potential for a free-rider problem, and second, members of the team often have an influence on who will be hired or promoted to become their team member. Our results show that the free rider problem is diminished if the team is composed of members of the same social network. Reminiscent of this fact is the success of Japanese firms, often attributed to team spirit. Perhaps this is the case because compensation is for a large part based on the firm's success, but Kandel and Lazear suggest that another possibility may be peer effects, and they note that "Partnerships are often formed among friends or family members. Despite the free-rider problems (...) partners often put in long hours and exert substantial effort. One explanation is that when partners are friends or relatives, empathy is strong ..." (Kandel and Lazear, 1992, p. 808).

The setup of the rest of the paper is as follows. The next section briefly reviews the related literature. Section 3 describes the experimental setup and data construction. We then discuss results in section 4. Finally, section 5 concludes.

2 Related Literature

The theoretical literature on discrimination goes back to Becker (1971), who models pure taste-based discrimination as a price that individuals are willing to pay not to interact with certain groups. Goldberg (1982), showed that if some firms have a preference for nepotism, they can survive in competitive markets, and discrimination can be sustained over time. Prendergast and Topel (1996) study the implications favoritism has on optimal incentive schemes, showing that it is not always harmful.

There is a large empirical literature on discriminatory and favoritism practices among adults. The challenge of this literature has been to establish whether a preferential treatment is unfair or not, because objective measures of performance or merit are rarely available. While there is now a fair amount of evidence of discriminatory practices based on objective characteristics, such as gender, race,or ingroup members[3], the evidence on "nepotism" practices is much thinner. This literature faces a second challenge, because typically information on social ties is not available either.

[3]Falk and Zehnder (2007), Fershtman and Gneezy (2001) are examples of recent studies providing experimental evidence of favoritism based on race. See Charness et al. (2007) and Bernhard et al. (2006) for recent findings on ingroup favoritism.

A recent exception are the studies Bandiera et al. (2009a, 2009b) who provide field experimental evidence on favoritism practices within a fruit-picking firm. Workers pick fruit under the supervision of a manager (who allocates them to specific rows in the field) and are rewarded with a piece-rate. They argue that managers can favor workers by allocating them to better, more productive rows. They find that the performance (and therefore pay) of fruit-picking workers who are socially close to the managers is higher when the manager's pay is not linked to the worker's performance than when it is (Bandiera et al., 2009a). This suggests that managers are likely to favor their friends when it is costless to do so, but favoritism disappears when it becomes costly. Bandiera et al. (2009b) find evidence that a worker's productivity is higher when she works alongside friends who are more able than her, but lower when these friends are less able than herself. They suggest that this is mainly because friends like to socialize, so their productivity is adjusted to stay in close physical proximity. Note that there are two key differences with our environment. First, in our experiment, children have little time to socialize, and this makes it less likely to be a primary factor (we will test for this). Secondly, in our experiments there is team production, so that there are positive externalities of exerting more effort. By contrast, there are no externalities in terms of productivity among workers in the experiment by Bandiera et al., so in their set up reciprocity in this form is excluded.

Our study also relates to the literature on the moral development of children. Early contributions in psychology include Piaget (1932/1965) and Kohlberg (1970). By means of interviews, they studied the attitudes of children regarding justice and identified successive stages in the moral development of the child. Building on their work, a number of experiments have been designed to study altruism and fairness among children. A first group of studies is based on simple dictator games. The typical finding is that children become more fair (egalitarian) or altruistic as they become older (for recent studies, see Fehr et al. (2008), Harbaugh et al. (2007) and Benenson et al. (2007)). A second group of experiments introduces differences in merit and performance across children within a dictator game setting. The standard design (Leventhal and Anderson (1970)) is such that one child is asked to allocate rewards between herself and another child, after having performed a task and being told how well she performed in comparison to the other child. The pattern seems to be that allocation goes from non-work related for children up to 5 years old to ordinal equity – the order of rewards maps the order of performance – for 6 to 12 years old and finally to proportional equity (rewards proportional to merit) for older

children and adults. Lerner (1974) designed an experiment where children take on the role of independent advisor about the allocation of rewards between two other children. He also finds that younger children put more weight on equality and older children on equity (rewards proportional to merit). Hook (1978) argues that these differences may be due to differences in cognitive ability, in particular in calculating the rewards associated with a proportionality norm.

Overall, these "allocation" studies show that fairness considerations are present among children, but all these studies are in anonymous settings. The children know nothing more about the other children than their performance in the task. This study is first to investigate the allocation of a "privilege" in a situation where the decision maker has information both about the *performance* and *identity* of the subjects involved.

3 Experimental Setup

3.1 Recruitment and background characteristics

We were granted access to 9 primary schools in and near the city of Mons, Belgium. We targeted all children from classes one and two (aged between 6 and 8 years) and classes five and six (aged 11 to 12). All children whose parents gave written permission were selected to participate. Parents and teachers were informed about the basic outlines of the experiment. Children were not informed about the task prior to the experiment.

One month prior to the study, in April 2008, we obtained background characteristics about the children and their social network from three sources. First, we asked the children themselves to list their friends, beginning with their best friends. Secondly, we asked the parents for personal data about their children such as birthdays, length, number of siblings. Parents were also asked to list friends of the children, and to indicate how often they meet outside school. Finally, the teachers made a list of most popular children, and gave information about test scores.

Children with permission from their parents to participate were then grouped in groups of four. The group formation was done as follows: We took the pile of questionnaires containing the friendship information and shuffled them randomly. We then took the first three questionnaires and assigned them to a team, then we took the first questionnaire and went through the pile sequentially to pick the first questionnaire we encounterd with the name of a child mentioned by the first child assigned to the group. This ensured that we had at least one friendship tie in the group.

The experiment involved 64 complete groups of 4 (256 children).

3.2 Description of the game

Groups were called one by one from their class, most often during their physical education. We told them that they were part of a tournament in their class, and that the objective was to win the tournament. We then explained the game to them. Every child had its own color of balls. They were asked to bring as many balls as possible from one basket to another within 30 seconds. We showed them what they were supposed to do. This task has several advantages: It is simple to understand, individual and team performance is easily measured, transparent to all team members, and mainly depends on effort. Also, the pilot showed that children enjoy performing the task.

For the younger children, the distance between the baskets was 2 meters, and 3 meters for the older children. We chose different distances to ensure the similarity in distributions of performance. This is important if we want to compare behavior across age groups. They all performed the task simultaneously. They were only allowed to take one ball at the time, and any ball bouncing out of the basket was not counted (as to prevent throwing).

After 30 seconds, we shouted "stop" and counted the balls in front of them, one by one, and wrote down the number visibly for all on a scoreboard, and read the scores aloud. We then added the scores together and announced the team score for that first round. We told them that they all received a small gift (independent of their performance in the first round), and that we would play a second (and last) round.

3.3 Treatments

We implemented two treatments:

Treatment "*Together* ": We told the children that two of the four children would do the task again for the team, and earn a second little gift for that. They were asked to choose one other child who, in addition to him or herself, would be entitled to perform the task again.

Treatment "*Alone*": We told them that only *one* of them would do the task again for the team and would earn a second little gift. They were asked to choose one child (other than her or himself) who would be entitled to perform the task again.

The choices of the children were elicited as follows. They each received three cards, with

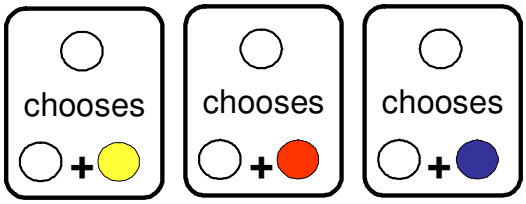

Figure 1: Example of choice cards for player 'white' (treatment SO).

their own color and the three colors of the other players (Together-treatment) or just the colors of the other players (Alone-treatment). They selected one card in private, and handed it over to us. Figure 1 shows an example of the three cards provided to one of the children (who was assigned the color white). We gave them about a minute to make their choice and collected the cards. We then randomly picked one, showed the chosen card and read it allowed, e.g. "White chooses White and Yellow" in the Together treatment and "White Chooses Yellow" in the Alone treatment. Thus, in both treatments, children were informed of who had chosen them. This procedure was simple to understand for the children and allowed us to infer preferences from all 4 children.

The child chosen to play the second round is our main variable of interest. At the point of making the choice, the children see the performance of each of them on the board. We can therefore study whether, conditional on performance, a friend is more likely to be chosen than someone else. Our definition of favoritism focuses on the act of systematically favoring friends, conditionally on performance and merit. Thus, the "unfair" character of favoritism lies in the systematic aspect of the preferential treatment. In principle, the fact that a friend is chosen among two people with equal performance may not appear as "unfair". We are interested in the systematic aspect of such practice, which will result in friends being better off on average than others. Thus, our perspective of favoritism is very much focused on the side of those who are favored and disfavored. This definition of favoritism encompasses both costly and costless favoritism. Favoritism is costly if it translates into reduced performance and therefore reduced probability of winning. We discuss in Section XX whether favoritism is costly or not.

The difference between the two treatments should capture the consumption value associated

with performing the task together with the chosen person. Arguably, the value of interacting with the other person is relatively limited or minimal. This needs to be kept in mind when we come to the results.

3.4 Incentives

The game was framed as a tournament, the children were explicitly told that they formed a team and were competing against other teams in the class. They did not know how many teams there were (since we needed parental consent of the children, not all children in the class participated and we did not reveal until the end who was participating and how many teams there were).

Children received one or two gifts, depending on whether they participated to the first round or to both rounds. The gifts they received were decorated gums and pencils for the young children, and neon markers for the older ones, wrapped in a colorful paper bag. At no point did we specify the nature of the gift to make sure that differences in valuations for these gifts would not influence their behavior and selection decision. Nevertheless, one important characteristic of these gifts is their indivisibility.

Our main interest is to document how children weigh performance and friendship in the selection decision. We wanted to remain as close as possible to the type of situations with which children are regularly confronted, using incentives they are familiar with, that is "points" and the nomination of a "winner" at the end. *We did not attach an additional reward to winning.* Our experience with the children showed that they were very motivated and cared about winning in itself (for example, some children came back with a calculator to make sure that we had added up the points of their team correctly; they were very keen to know who had won the tournament and the winning team cheered when they heard the result). We will come back to this aspect later on when we describe the results.

We did depart from the "usual" setting though by attaching a gift to participation. Being allowed to play a second time could be considered as a privilege in itself and our experience taught us that children were very keen on playing a second time. Nevertheless, the task requires effort, so we chose to attach a gift to participation in each round to make sure that, indeed, being selected would provide a clear privilege.

The scheme has the virtue of being very simple to understand for even very young children. In particular, there is no cognitive difficulty in identifying the fair allocation. It is very easy

to identify who is the best performing child - the most obvious candidate for selection. Thus, differences in behavior according to age are unlikely to be driven by differences in cognitive ability.

3.5 Sources of favoritism

We designed the experiment to distinguish between possible mechanisms driving favoritism practices.

- *Altruism or warm glow* Children may feel good about favoring their friends. This has many gradations, ranging from purely altruistic reasons, to a warm glow from the act itself of being nice towards friends (see Andreoni, 1990).
- *Social interaction* Children may select their friends because they find it pleasant to play in company with them, rather than with children that are not their friends, just as much as most people may prefer to work in teams with colleagues they appreciate.
- *Reciprocity* Children may pick their friends because they expect their friends to put more effort into the task.

Because we observe performance in the second round as well, we can observe whether those who are privileged do put more effort into the task, and thereby identify possible reciprocity effects. More precisely, we can compare the change in performance between the first and second round and see whether it differs for those who have a friendship tie with the child choosing and those who do not.

Our treatments Together and Alone are designed to identify the value of social interaction. In the Alone-treatment there is no option to play together in the next round. If enjoying the company is the main motivation, therefore, friends should no longer be favored in this treatment. By contrast, if altruism or reciprocity is the main motivation to favor friends, the friendship coefficients should be of similar magnitude in the Alone treatment as in the Together treatment.

In addition to the above mechanisms, it is also possible that some forms of reciprocity occur after the experiment was completed. Friends that are chosen may return this favor later on, or may retaliate for not being chosen. Furthermore, those chosen could possibly act in a way that strengthens the friendship afterwards. We cannot observe to what extent such factors play a role.

3.6 Measure of friendship

Children and parents were asked to list friends in order of importance. Not all children returned the questionnaire, but since we needed parental authorization we always have answers from parents. Whenever data from children is missing, we used answers from their parents.[4] We constructed a measure of friendship based on the list of friends provided by each child. For each child, we identify the children listed with a dummy variable "friend". Then we coded the listed children according to the order they were listed: The first child (best friend) was coded as "friend 1", the children listed 2d to 4th were coded as "friend 2-4" and we coded all the children named after that as "friend5+".

3.7 Age and favoritism

We study two groups of children; younger children (age 6-7) and older ones (11-12). Since the experimental design is extremely simple, we consider two possible explanations why favoritism practices may change with age:

- Friendship quality: Friendships surely change and grow over time, and we could expect that the friendships of older children are more stable, better established and therefore, stronger.
- Fairness considerations: As we have discussed earlier, younger children tend to be more selfish than older ones. It could be that their conception of fairness is different from older ones.

4 Results

We first present some summary statistics of the experiment (Table 1). We had 256 participants, of which 119 were girls (46%), and 137 (53%) were young children. The average number of balls brought to the other basket in round 1 is close to 10, and ranges from 5 to 13. The average performance in round 1 is very similar across all groups. Girls tend to do slightly worse (Mann-Whitney test, $Z = 5.708$, $p = 0.000$), by around .3 balls. Older children also do only slightly worse, so it seems that the difference in distance between the age groups (1 meter) makes up for the difference in length and speed across ages.

[4] For the cases where we have information from more than one source, we did not find different results.

Table 1 also reports the average number of times that a child is listed as a friend by a group member. The average is .96 ranging from no friends in the group to being friends of all other group members. Girls are somewhat more often listed as a friend than boys, but this difference is not significant (Mann-Whitney test, Z = -1.076, p = 0.282).

Table 1 - Summary Statistics

category	average	st.dev.	min.	max.	N. obs.
Performance round 1					
All	9.94	1.37	5	13	256
Boys	10.11	1.51	5	13	137
Girls	9.76	1.16	7	12	119
Young	10.07	1.42	5	13	136
Old	9.81	1.29	6	13	120
Number of friends in the group					
All	.96	.88	0	3	256
Boys	.91	.87	0	3	137
Girls	1.03	.89	0	3	119
Young	.96	.83	0	3	136
Old	.97	.93	0	3	120

4.1 Selection decision

We now study the determinants of the selection decision. Since there are four children in the team, the benchmark probability for being chosen is 1/3. Figure 2 shows the frequency of being chosen according to performance (top panel) and friendship (bottom panel). We have pooled the data from both treatments. If we consider performance first, we see a striking difference between younger and older children. Among young children, best performers are only slightly more likely to be selected. Performance plays a much stronger role among older children. The best performing child is selected in 50% of the cases, while the second, third and fourth have roughly equal probabilities of being chosen. The bottom panel shows the relationship between friendship and selection. Friends are selected in more than 50% of the cases, while non-friends are chosen only in 20% (younger children) and 25% of the cases (older children). Not surprisingly, this difference is significant at any conventional level for both groups. It thus appears that performance becomes an important factor in the selection choices, replacing 'noisy' factors when children get older, and not displacing any friendship effects.

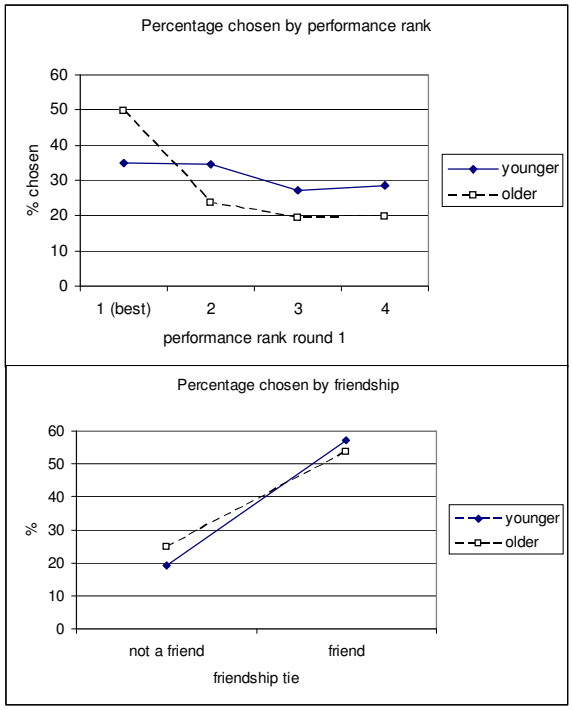
Percentage chosen by performance rank
% chosen
60
50
40
30
20
10
0
1 (best)
2
3
4
performance rank round 1
younger
older
Percentage chosen by friendship
%
60
50
40
30
20
10
0
not a friend
friend
friendship tie
younger
older

Figure 2:

We now turn to a regression analysis of these findings. We estimate the probability that child i is chosen by child j. We estimate a linear probability model:

$$P(chosen_{i,j} = 1) = \alpha + \beta Rank_i + \delta Dist_{i,j} + \theta X_i + \upsilon_i + \varepsilon_{ij},$$

where *Rank* is a set of dummy variables identifying the performance ranking in the group excluding the choosing child (1, 2, or 3); *Dist* is a set of dummy variables identifying the friendship distance between the choosing child j and child i; and X_i is a vector of attributes (such as gender). We wish to investigate whether, *conditional on performance*, friends are treated differently than others. The null hypothesis of no favoritism corresponds to $\delta = 0$.

Of course, friendship ties are not randomly formed, such that we cannot claim at this stage that we identify a causal effect. In particular, it could be that children who are better able are more likely to be nominated by others as their friend. These popular children will all else equal be more likely to have a low social distance with anyone in the group (even if the group is randomly formed). If popularity is correlated with ability, the estimate of δ could partly capture unobserved ability. We discuss this issue in detail after presenting first results.

We first describe the results where we group the data from both treatments by age. Table 2 reports the results for the young children. We first estimate the probability of being chosen by another child to play the second round depending on one's performance. The results confirm what we have documented earlier: For younger ones (col (1)), performance plays no role in the selection decision. The coefficients of *Rank* are small and insignificant. For older ones (col. 4)), there is a clear and strong relationship between performance in the first round and selection. Not being ranked first lowers the probability of being selected by around 30 percentage points compared to the best performer. Thus, older children are more likely to select another child based on merit. One possible explanation for this is that performance in the first round is a better predictor of performance in the second round for older children. The correlation between performance in the first and second round is indeed slightly higher for older children than for younger ones (.50 versus .39). However, there is still a strong positive correlation between the two, even for younger children, so it does not explain the results entirely.

Col (2) and (5) control for a dummy variable for whether there is any friendship relationship between the child and the choosing child (identified by the choosing child). The coefficient of

friendship is highly significant and very sizeable, for both older and younger children. Being a friend of someone increases the probability of being chosen by 16 percentage points for older children and 25 percentage points for younger ones. Col (3) and (6) includes dummies capturing the degree of friendship closeness with the choosing child. We distinguish between best friend (*Friend 1*), second best to fourth best friends (*Friend 2-4*), and fifth best friend or more (*Friend 5+*). We find that all degrees of friendship matter for young children, while mainly the best friend matters for older children. That is, the closeness of the friendship has a stronger effect on selection for older children than for younger ones. One possible explanation for this difference could be that friendships at an older age are stronger and more stable than friendships at a younger age.

In summary, younger children seem to base their choice mainly on friendships, while older children put more weight on performance, although best friends are more likely to be privileged too.

Table 2 - Probability of being chosen for the second round

	(1)	(2)	(3)	(4)	(5)	(6)
	younger children			older children		
Rank 2	-.052	-.038	-.045	-.313***	-.313***	-.290***
	(.055)	(.053)	(.053)	(.059)	(.060)	(.058)
Rank 3	-.076	-.084	-.097*	-.266***	-.279***	-.275***
	(.058)	(.056)	(.056)	(.064)	(.066)	(.062)
Friend		.251***			.163***	
		(.049)			(.051)	
Friend 1 (best)			.330***			.438***
			(.094)			(.091)
Friend 2-4			.226***			.083
			(.075)			(.065)
Friend 5+			.207***			.019
			(.074)			(.072)
Gender_p	-.015	-.016	-.022	-.078	-.081	-.077
	(.046)	(.044)	(.045)	(.050)	(.050)	(.048)
constant	.360***	.271***	.285***	.521***	.478***	.467***
	(.038)	(.036)	(.041)	(.049)	(.055)	(.053)
N children	408	408	408	360	360	360
R^2	.005	.07	.07	.11	.16	.17

Notes: Linear probability model. Standard errors clustered by child. Performance rank excludes choosing player. Data pooled over treatments. *** significant at 1%, ** at 5%, and * at 10%.

As we discussed above, one could expect that friendships may be correlated with unobserved ability, popular individuals are more likely to have been nominated by someone in their group and could also be better able. This is particularly a concern because our measure of performance

is just one draw. Children may know better who is most qualified to play the second round. We can investigate this possibility in three ways: First, we investigate how the friendship effect varies when we do or do not control for performance in the first round. If friendships are (positively) correlated with ability, then we would expect to see that the friendship effect differs (becomes stronger) when we do not control for performance in the first round, as they will pick up the performance effect. Second, we have information on the total number of nominations a child received in his class. Because of the random assignment of children to groups, some equally popular children will end up in groups with more or less friends. Thus, we can control for popularity and see whether the friendship effect subsists. Last, we have information on physical education grades for a sample of the older children and can examine how the friendship effect changes when we control for grade.

Table 3 presents the linear probability model estimates controlling for the rank in the first round (columns (1) and (3)) and not controlling for the rank in the first round (columns (2) and (4)). The point estimates of the friendship effect change hardly at all, compared to those of Table 2. There seems to be very little correlation between our measure of social distance and performance in the first round.

Table 4 presents linear probability estimates controlling for the child's overall popularity and grade in physical education. In columns (1) and (3), we only distinguish best performers - leaving most room for a possible bias in the friendship effect, and replicate the results of Table 2 for young and old children respectively. Columns (2) and (4) include the number of nominations[5], where missing values for nominations are replaced by the mean, and a dummy is included for missing values. We find that overall popularity has no direct effect on the probability of being chosen, and the other coefficients are not affected. Finally, we find that a higher grade in physical education (measured on a scale from 0 to 10, missing values replaced by the mean) does increase the probability of being chosen, but the effect seems completely orthogonal to the friendship effect (column (5)). Thus, we conclude that the effects we have documented earlier are not driven by a correlation between unobserved ability and friendships.

The results so far suggest that indeed, there is a form of favoritism whevery, conditional on performance, friends are systematically more likely to be chosen than others. This implies a

[5] We included this variable only for groups where more than 50% of the children in the class participated to the experiment. For the others, we subsituted the value by the mean number of nominations, such that we can estimate the effects of the other variables on the whole sample, controlling for the effect of nominations.

direct benefit for friends in comparison to others. We cannot tell yet, however, whether this preferential treatment is costly to the discriminator in terms of reduced team performance and reduced probability of winning.

Table 3 - Probability of being chosen for the second round

	(1)	(2)	(3)	(4)
	— younger children —		— older children —	
Friend 1 (best)	.330***	.313***	.438***	.457***
	(.094)	(.091)	(.091)	(.091)
Friend 2-4	.226***	.228***	.083	.123
	(.075)	(.074)	(.065)	(.072)
Friend 5+	.207***	.210***	.019	.079
	(.074)	(.074)	(.072)	(.071)
N children	408	408	360	360
controlling for performance	Yes	No	Yes	No
R^2	.07	.06	.17	.08

Notes: Linear probability model. Standard errors clustered by child. Performance rank excludes choosing player. Data pooled over treatments. *** significant at 1%, ** at 5%, and * at 10%.

Table 4 - Probability of being chosen for the second round (continued)

	(1)	(2)	(3)	(4)	(5)
	- younger children -		—— older children ——		
Best performer	.066	.066	.316***	.315***	.292***
	(.045)	(.045)	(.053)	(.053)	(.050)
Friend 1 (best)	.324***	.325***	.439***	.437***	.423***
	(.093)	(.093)	(.092)	(.093)	(.088)
Friend 2+ (not best)	.219***	.220***	.083	.075	.124**
	(.056)	(.059)	(.058)	(.060)	(.055)
Number of nominations		-.001		.009	
		(.013)		(.017)	
Missing nomination dummy†		-.008		-.001	
		(.045)		(.095)	
Grade in physical education					.140***
					(.047)
Missing grade dummy††					.022
					(.050)
constant	.210***	.219***	.129***	.095	-1.027***
	(.032)	(.061)	(.031)	(.090)	(.385)
N children	136	136	116	116	116
R^2	.07	.07	.18	.18	.18

Notes: Linear probability model. Standard errors clustered by child. Data pooled over treatments. *** denotes significant at 1%, ** at 5%, and * at 10%. †Missing values nominations replaced with mean value. ††Missing grades physical education replaced with mean grade.

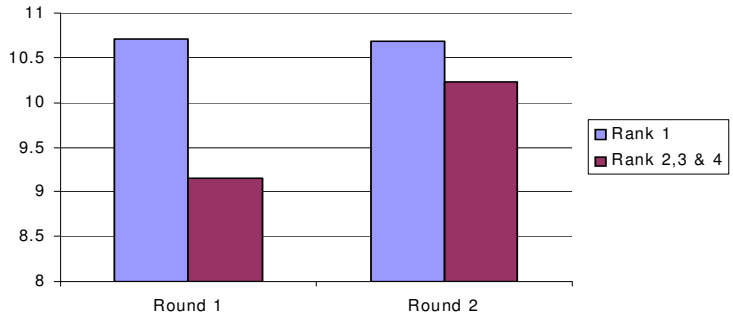

Figure 3: Performance in Round 1 and 2, split by best performers (rank 1), and not best performers (ranks 2, 3 and 4).

4.2 Why are friends favored?

We now investigate the possible mechanisms driving favoritism. First, we investigate whether there is a possible flip side to favoritism, that is, whether those who are favored put more effort into the task subsequently. *This will also enable us to assess whether favoritism is costly to the discriminator or not.* Second, we investigate whether children value social interaction by comparing their behavior across the two treatments.

4.2.1 Reciprocity

The previous analysis established that children tend to favor their friends, conditionally on performance in the first round. We now investigate how performance changes between the first and second round. Figure 3 shows how performance changes across rounds depending on the ranking of the children in the first round, using the sample of children who play both rounds. Obviously, the best performing children have a higher performance in the first round. But in the second round the gap between best performers and the other children shrinks substantially. Performance remains very similar in the second round for the first ranked children, but improves significantly for the lower ranked children. Thus, the picture is a very different one depending on whether one looks at performance ex ante or ex post.

How can we explain this improvement in performance ex post for low achievers? *The analysis of the previous section showed that the choice of a friend was unlikely to be driven by private information about ability, since it appeared uncorrelated with any other measure of ability or performance.* A second possible explanation is regression to the mean: low achievers have more

room to improve than high achievers, through learning or otherwise. A third explanation is a positive flip side of favoritism, i.e. those who have been favored could reciprocate the favor by providing more effort. We now investigate in more detail the relationship between friendship ties and the change in performance.

If the improvement in performance is entirely due to regression to the mean, then the improvement in performance should be independent on whether there is a friendship tie between the choosing and chosen child. *Note that the same is true if the choice was driven by private information about ability. If children were indeed choosing the child they believe is the most able (and is not necessarily the best performer in the first round), then the analysis in the previous section shows that there is no reason to expect that this child should be a friend, and so there is no reason why we should expect the improvement in performance to be different for friends than others (conditioning on performance in the first round).*

Let y_j^* denote the expected output of child j. We wish to test whether $y_j^2(friend_{i,j} = 1|y_j^1) > y_j^2(friend_{i,j} = 0|y_j^1)$, that is, whether friends put in more effort in the second round in comparison to non friends, conditional on their performance in the first round. Table 5 shows the results.

We find a striking pattern: Conditional on performance in round 1, both younger and older children are significantly more likely to improve their performance if they have been chosen by their friend, more precisely, by their closest friend. Clearly, there is also an effect of regression to the mean, those who performed better in the first round have lower improvements in performance across rounds. But there is also strong evidence of a positive flip side of favoritism, something that one can only uncover if one can observe performance ex post. This effect is particularly noteworthy given that we have given no additional incentives to winning the tournament than the mere "honour of winning".

Table 5 - Difference in performance between rounds and friendship

	Younger	Older
Friend 1 (best)	1.481	.584
	(.343)***	(.308)*
Friend 2+ (not best)	.338	-.220
	(.246)	(.237)
Performance round 1	-.627	-.539
	(.095)***	(.065)***
Constant	6.553	5.727
	(.997)***	(.684)***
N children	87	86
R-squared	.43	.49

Notes: *** significant at 1%, ** at 5%, and * at 10%

The question is whether this flip side outweighs the negative effect of not choosing the best performer in the first round. Table 6 reports the means of performance, split by rank in round 1 and the number of friends (pooled over degree and treatment). We see that average performance in round 2 is highest for the group with many friends that are ranked low in round one (11.3 balls).

Preventing favoritism may result in the selection of higher ability people, but those who are chosen because of friendship ties increase their effort in such a way that it compensates for their lower ability. This insight shows that favoritism may not be that costly after all, *from the point of view of the discriminator.* Also, if this mechanism is as important as our results suggest, increasing the incentives to win the competition will not necessarily change the selection decision.

Table 6 - Average Performance round 2 by rank and friends

	rank round 1	
	1 or 2	3 or 4
0 or 1 friends	10.67	10.14
	(1.25)	(.89)
2 or 3 friends	10.87	11.33
	(1.27)	(1.52)

Notes: Means, standard in parentheses.
Grouped data over degree and treatments.

4.2.2 Friendships and interaction value

As a final exercise, we investigate the extent to which favoring friends is related to a value of playing together. Our treatments enable us to isolate a value of interaction, which is to do

the task again with the friend. Of course this social interaction is very limited, since children perform the task independently. Nevertheless, comparing their behavior in these two treatments may shed some light on whether children value social interaction at all.

We estimate the following model:

$$P(chosen_{i,j} = 1) = \alpha + \beta Rank_i + \delta Dist_{ij} + \gamma Dist_{ij} \times treatment + \theta X_i + \upsilon_i + \varepsilon_{ij},$$

where we interact the friendship dummy variables with the treatment dummy (0 for Together treatment, 1 for Alone treatment). The importance of social interaction is measured by $\delta - \gamma$.

Table 7 reports the results. Because the coefficients on distance were similar for 2-4 friends and 5 or more friends, we group them together. Column (1) shows the estimates for younger children. As before, performance seems of little relevance to the young children, while friends are much more likely to be chosen, with the highest coefficient for best friends. The interaction terms of friends and treatment Alone are small and not significant.

Column (2) reports estimates for older children. We find a large negative coefficient for the interaction term best friend and treatment Alone. Thus, best friends are much more likely to be chosen in the Together treatment, but the effect is weaker in the Alone treatment.

As a final exercise, we investigate how these results differ across gender, as it is well-known from psychologists that boys and girls play differently (see for example McCoby (2002)). The evidence suggests that boys care more about winning and think it is good to be part of a winning team, especially older ones. Girls, on the other hand, are generally more interested in building alliances, and often regard winning as bad because someone has to lose and might feel hurt or upset. The results are presented in columns 3 and 4. We do indeed find different effects for boys and girls. Boys do not select friends significantly more often, although the coefficient for best friend is sizeable (column 3) There is also no indication of a treatment effect. Girls are much more likely to select their best friend in the Together treatment, but not in the Alone treatment: the coefficient of best friend (.545) is offset by the negative interaction term (-.615). Thus, even in this context where the value of interaction is relatively limited, we do find that this is driving entirely the decision of older girls to pick a friend.

Table 7 - Probability of being chosen for the second round

	(1) young	(2) older all	(3) older boys	(4) older girls
Rank 2	-.046	-.307***	-.316***	-.329***
	(.054)	(.060)	(.083)	(.087)
Rank 3	-.094	-.302***	-.370***	-.225**
	(.057)	(.063)	(.081)	(.101)
Friend 1 (best)	.345***	.583***	.281	.545***
	(.109)	(.126)	(.187)	(.167)
Friend 2-5	.219***	.091	.087	.063
	(.065)	(.089)	(.109)	(.104)
Friend 1 & treatment 2 **(Alone)**	-.051	-.278*	.032	-.615***
	(.197)	(.166)	(.221)	(.202)
Friend 2-5 & treatment 2 **(Alone)**	-.008	-.016	-.162	.080
	(.116)	(.100)	(.122)	(.144)
Gender_p	-.019	-.085*	-.267***	-.067
	(.044)	(.050)	(.073)	(.082)
constant	.284***	.484***	.641***	.403***
	(.041)	(.055)	(.086)	(.077)
N children	405	335	161	174
R^2	.19	.12	.31	.17

Notes: standard errors clustered by childid_p. Performance rank excludes choosing player
*** denotes significant at 1% level, ** at 5%, and * at 10%.

5 Conclusions

This paper provides unique field evidence on the practice of favoritism among children. It is one of the few studies with information on individual performance and the social network. In a controlled field experiment, we are able to identify the importance and development of a favoritism among children, as well as the underlying motives.

We find that both younger and older children tend to favor their friends over others. Performance, by contrast, plays no role at all among younger children, but is very important among older children. Goeree et al. (2007) also find that children are more generous towards their friends in a dictator game. Our results show that this effect persists in a situation where differences in merit exist and friends do not necessarily "deserve" to be treated better than others. Children attribute a substantial weight to friendships.

An interesting and novel finding is that there seems to be a positive flip side to favoritism. What may appear as favoritism based on indicators of performance *ex ante* turns out to be beneficial for the group as a whole when we take performance *ex post* into account. Friends who

are chosen *despite* not being the best performers, put in more effort in the second round than all others. Thus, preventing favoritism may come at the cost of future performance, if people perform better around their friends than other people. We can identify some key assumptions for our results to have relevance. First, productivity has to depend for a relatively important part on efforts compared to ability. Only if higher efforts can compensate for lower ability, can it be beneficial to select friends rather than the person with the highest ability. Secondly, there have to be externalities present in the production technology. Reciprocation by increased effort is only beneficial if it helps the other team members. Thirdly, more high-powered incentives do not necessarily reduce favoritism. Only insofar as increased efforts do not outweigh less talent, will giving high-powered incentives help to reduce favoritism. Finally, note that in the setting we studied, reciprocity takes the form of increased efforts in the productive task. More generally, there may be scope to reciprocate favors in other ways, possibly leading to nonproductive uses of resources.

Finally, while our results apply to children, the setting has a close resemblance to the labor market, where people often work in teams, and promotions can depend on social connections. From that perspective, the emergence of social ties may play a critical role in determining chances later on in life. Importantly, friendships do not appear to distort ineffieciently the allocation of resources, but they do benefit particularly those who are well embedded in social networks. Thus, it seems important to understand why and when do differences in network positions emerge. Conti et al. (2009) find that the early family and school environment play a crucial role in shaping friendship networks. This type of research should uncover valuable policy-relevant routes to explore in the light of the large disparities existing in society.

6 Appendix: Instructions and Questionnaires

6.0.3 Instructions

[Translated from French. Instructions were given verbally] welcome to you all. We organized a small tournament in your class. You are the [number] team. The objective is to win the tournament. Every one of you will get its own color. The objective is to bring as many balls from one basket to another within 30 seconds. There are two rules. First, you can only take one ball at the time. Secondly, you are not allowed to throw balls. If you throw a ball, it is likely that it will bounce out of the baskets, and it will not count. Now please stand behind your color

of balls. Are you ready? [task done, scores written down and read aloud] Well done. For this, you will all receive a small gift at the end. Now we will play a second round, where you can earn an additional gift, but this time only to a few and play. This is the last round we play. I will give you cards with the colors of the other players. Please select the card with the color of the other player you would like to play with in private, and hand it over to me. After I collected all cards, I will shuffle them and pick one. [Cards shuffled in front of them and one randomly selected]. Okay, so [names and colors of 2 players] will play a second-round. The other two players will watch. [task done, end score reported]. That was it. You will receive your gifts later today. Thank you for participating!

Questionnaire for children Name

Class

Name of teacher

Who are your closest friends in the class? (by order of preference)

Who are your favorite play-mates in the class?

Which of your schoolmates do you see regularly outside the school?

Questionnaire for parents Name

Date of birth

Address

Year of study

Height

Weight

How far do you live from the school? (in km)

When did you join this school?

Profession of father

Profession of mother

Number of brothers

Number of sisters

Does he/she wear glasses?

Does he/she wear braces?

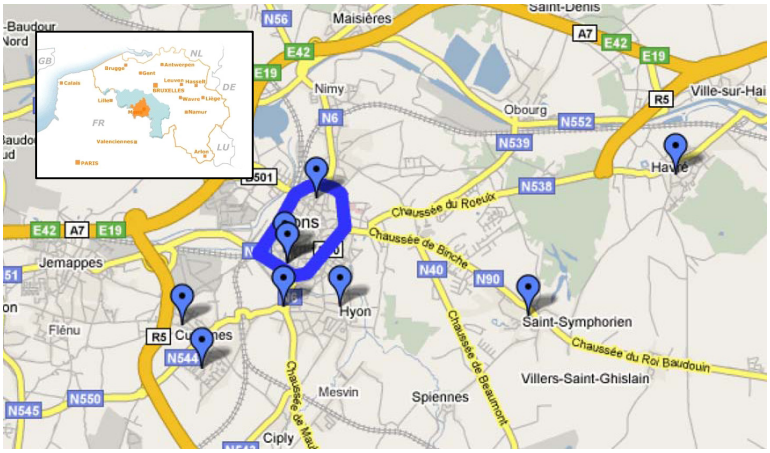

Figure 4: Map of Mons and surroundings with the school location Inset: Belgium with the region of Mons highlighted.

Position in the sibship: (1) for eldest, (2) for second etc.

Who are his closest friends? (by order of preference)

Which schoolmates does he/she regularly outside the school?

How often does he/she interact with other children (other than siblings) outside the school? 1) daily; 2) at least once a week, 3) at least once a month, 4) rarely, 5) never

Questionnaire for teacher Who are the most popular children in the class?

Who are the least popular children in the class?

Who are the children who received disciplinary measures in the last three months?

Average grades in physical education of all children

Average grades in mathematics of all children

References

[1] Andreoni, J. (1990), Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving, *Economic Journal* 100, 464-477.

[2] Bagues, M. and B. Esteve-Volart (2009), Top Civil Service: Meritocracy or Nepotism?, *mimeo*

[3] Bandiera, O., Barankay, I. and I. Rasul (2009a), Social Connections and Incentives in the Workplace: Evidence from Personnel Data, Econometrica, Forthcoming.

[4] Bandiera, O., Barankay, I. and I. Rasul (2009b), Social Incentives in the Workplace, Review of Economic Studies, forthcoming.

[5] Becker, G. (1971), *The Economics of Discrimination*, Second Edition, Chicago: University of Chicago Press.

[6] Benenson, J. J. Pascoe and N. Radmore (2007) Children's altruistic behavior in the dictator game, *Evolution and Human Behavior* 28(3), 168-175.

[7] Bernhard, H., U. Fischbacher and E. Fehr (2006), Parochial altruism in humans, *Nature* 442, 912-915.

[8] Brañas-Garza, P., Cobo-Reyes, R., Jimenez, N., and Ponti, G.(2006), Altruism in the (Social) Network, Mimeo.

[9] Brandts, J. and Sola, C. (2009), Personal Relations and Their Effect on Behavior in an Organizational Setting: An Experimental Study, forthcoming in *Journal of Economic Behavior and Organization.*

[10] Calvo-Armengol, A. and M. Jackson (2009), Peer Pressure, *Journal of the European Economic Association*, forthcoming.

[11] Charness, G., L. Rigotti and A. Rustichini (2007), Individual behavior and group membership, *American Economic Review* 97, 1340-1352.

[12] Falk, A. and C. Zehnder (2007). Discrimination and In-Group Favoritism in a Citywide Trust Experiment, IZA Discussion Papers 2765, Institute for the Study of Labor (IZA).

[13] Conti, G., Galeotti, A., G. Mueller and S. Pudney (2009), Popularity, *ISER Working Paper Series* 2009-03.

[14] Fehr, E., H. Bernhard and B. Rockenbach (2008), Egalitarianism in young children, *Science* 454, 1079-1085.

[15] Fershtman, C., and U. Gneezy (2001), Discrimination in a Segmented Society: An Experimental Approach, *Quarterly Journal of Economics* 116(1), 351-77.

[16] Goeree, J. K., M.A. McConnell, T. Mitchell, T. Tromp, and L. Yariv (2008), The 1/d Law of Giving, Mimeo.

[17] Goldberg, Matthew S. (1982), Discrimination, Nepotism, and Long-Run Wage Differentials, *Quarterly Journal of Economics* 97, 307-19.

[18] Granovetter, M. (1973), The Strength of Weak Ties, *American Journal of Sociology 78*, 1360

[19] Häger, K., D Houser and D. Schunk (2008), Status and Altruism in Children, mimeo.

[20] Hamilton, H., J. Nickerson, and H. Owan (2003), Team Incentives and Worker Heterogeneity: An Empirical Analysis of the Impact of Teams on Productivity and Participation, *Journal of Political Economy* 111, 465-497.

[21] Harbaugh, W., K. Krause and T. Berry (2001), GARP for kids: On the development of rational choice behavior, *American Economic Review* 91(5), 1539-1545.

[22] Harbaugh, W., K. Krause and L. Vesterlund (2007), Learning to Bargain, Journal of Economic Psychology, 127-142.

[23] Hook, J. (1978), The Development of Equity and Logico-Mathematical Thinking, *Child Development* 49(4), 1035-44.

[24] Kandel, E., and E. Lazear (1992), Peer Pressure and Partnerships, *Journal of Political Economy* 100, 801–17.

[25] Kohlberg, L. (1970), Stage and sequence : the cognitive-developmental approach to socialization, s.l: s.n.

[26] Lerner, M.J. (1974), The Justice Motive: "Equity" and "Parity" among Children, *Journal of Personality and Social Psychology*, 29 (4), 539-550,

[27] Leventhal, C.,& Anderson, D. (1970) Self-interest and maintenance of equity. *Journal of Personality and Social Psychology*, 15, 57-62.

[28] Maccoby, E.E. (2002), Gender and Group Processes: A Developmental Pespective, *Current Directions in Psychological Science* 11(2), 54-57.

[29] Milgrom, P. (1988), Employment Contracts, Influence Activities, and Efficient Organization Design, *Journal of Political Economy* 96, 42-60.

[30] Mobius, M., Quoc-Anh, D., and Rosenblat, T. S. (2004), Social Capital in Social Network, Mimeo.

[31] Piaget, J. (1932), *The Moral Judgement of the Child*, London : K. Paul, Trench, Trubner, republished in 1965 by Free Press, New york.

[32] Prendergast, C. and R. Topel (1996), Favoritism in Organizations, *Journal of Political Economy* 104, 958-978.