Does Cronyism Pay? Costly Ingroup Favoritism in the Lab

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Abstract

Cronyism in firms arises when favoritism toward an ingroup affects personnel decisions. Two main motives underlie cronyism: profit, if an ingroup employee works harder; or altruism, if used to transfer resources. In a lab-experiment trust game with naturally-occurring groups, an employer (proposer) faces an employee (responder) who is or is not an ingroup member. We see that both motives play a role. Cronyism is more likely from employers who are more altruistic to the ingroup in a dictator game; and even low-productivity (by design) ingroup members reciprocate trust generously. Cronyism pays for those who engage in it.

Keywords: Cronyism, Group Identity, Ingroup, Discrimination, Trust, Reciprocity, Lab Experiment
JEL Classification Codes: C92, D73, M51

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"Better to dance with the devil you know than the angel you don't." – English proverb

INTRODUCTION

Consider a manager who is in a position to hire one of two possible candidates with identical skills. One candidate has social ties to the manager, while the other candidate is randomly selected from the general population. Which candidate will the manager select for the position? More importantly, will the manager make the same choice if the candidate with social ties is less skilled? Managers who prefer candidates with social ties are viewed as engaging in *cronyism* (or nepotism in the case of kinship ties) and this behavior is costly when the preferred candidates have lower skills. Cronyism is widely regarded as inefficient and discriminatory, and yet it is pervasive. There is little agreement about why people engage in cronyism, or whether could, in fact, be profitable for them. The topic is difficult to study with observational data, where it may not be possible to identify motives for engaging in cronyism. This research deconstructs the concept by using a novel experimental design.

We consider cronyism as a preference for a partner from one's own primary group. Group membership can arise from kinship, friendship networks or shared identity. Two motives are offered for engaging in cronyism: one is based on the claim that cronyism is rewarded: members of the same group work harder, thereby reciprocating the trust placed in them (McConaugby et al. 2001; Kets de Vries 1993; Davis et al. 1997). The second motive (more common in the literature) is the desire to confer benefits on fellow group members (Vanhanen 1999; Brewer 1999; Chen and Li 2009; Brandts and Sola 2010; Belot and van de Ven 2011). While both motives are plausible, it is difficult to determine the relative contribution of each. This is due, in part, to the fact that the motives underlying cronyism are typically hidden from observation. For example, cronyism is usually considered socially undesirable (and in the case of nepotism, can be explicitly illegal). It is important to keep in mind that we focus on cronyism in the private sector where any negative effects are internal to the firm.

We employ a laboratory experiment with real social groups to deconstruct the motives for engaging in cronyism. Our design allows us to minimize considerations of social desirability by making all actions anonymous. We also directly manipulate the efficiency of candidates available to a manager, something that is difficult to observe in the field. This allows us to distinguish the effects of the two motives delineated above.

To implement our study, we take advantage of the Residential College system at Rice University. Entering Rice students are randomly assigned to one of eleven Residential Colleges, and they remain in their assigned college throughout their stay at Rice. Colleges have 340 members on average, and have their own dining halls, dorms, and faculty advisors. Freshmen undergo an intensive orientation period. These factors cultivate a strong group identity.[2] Thus our "ingroups" consist of residents from the same college.

This paper makes three contributions. First, we design an experimental model where cronyism can occur, and show that it is indeed a common practice among our sample. Second, we deconstruct the motives for cronyism, distinguishing between beliefs about reciprocity and favoritism, and show that both play a role. Third, we ask whether cronyism is profitable. We find that individuals engage in cronyism in large part because of their beliefs about the reciprocity of their fellow ingroup members. We also find that cronyism has a positive impact on reciprocity by ingroup members. This leads us to the main reason for the persistence of cronyism: it is profitable for those who engage in it.

RELATED RESEARCH

From the perspective of traditional economic theory, cronyism in the workplace can only reduce profit and efficiency, since restricting employment to a favored group must yield a less qualified candidate than an open, full search (Becker 1971). One might infer from this claim that, because cronyism is costly, the motivation for its use must be altruistic, based on a desire to transfer resources to fellow group members. However, this simple view of employment relations ignores other factors that can impact the productivity and efficiency of workers who share kinship or social ties. First, expectations of reciprocity may play a role in many settings. Greater reciprocity can arise because of social norms within kinship and other social groups, or because individuals in these groups can more easily monitor and police each other's behavior. In addition, a worker who knows that he is less qualified for a job is likely to be grateful to an employer who selects him, and exert greater effort in order to reciprocate the trust placed in him. Second, communication may be enhanced in work groups that contain family members or friends, leading to greater cooperation in tasks that require teamwork. This also means that

[2] While students can transfer from their college, less than 2 percent do so during their time at Rice. For more information on the residential college system, please see: http://students.rice.edu/students/Colleges.asp.

performance can improve when workers are able to learn better practices via social ties to higher-quality workers (Mas and Moretti 2009). Third, family ties and friendship networks can enhance the transmission of information about potential employees, leading to the selection of better, rather than weaker, workers (Beaman and Macgruder 2012; Pallais and Sands 2016). In our study, we utilize a simple setting that removes efficiency-enhancing communication and information/selection effects in order to focus only on the roles of altruism and reciprocity. Our experimental design focuses on these two key factors.

Ingroup favoritism is widespread in practice, whether it be within families, among co-ethnics, in social groups or in friendship networks. In a broad survey of research on kin selection, Hames (2015) reports considerable evidence showing a preference for, and greater generosity towards, those who are genetically related. Several papers cited in his survey also compare kin with friendship ties, and show that reciprocity plays an important role in both types of social groups. Reciprocity becomes relatively more important when engaging in exchange relations with friends. Thus, both factors are seen to play a role, with altruism dominating in nepotism, and reciprocity playing a stronger role in cronyism.

Family-owned and -managed firms often face the negative perception that ingroup favoritism, in the form of nepotism and cronyism, plays a major role in their personnel decisions, even when such a practice comes at a cost (Spranger et al. 2012). The evidence on the impact of family involvement on firm performance and value is somewhat mixed, with some studies finding a substantial penalty associated with family-related employment decisions (Bennedsen et al. 2007; Parise et al. 2018), and others finding little effect or even enhanced profitability in family managed firms (Anderson and Reeb 2003; Carney et al. 2015). Thus, the role of cronyism in firm profitability is not unambiguously costly, as one might predict.

Co-ethnics may share some degree of relatedness, but less so than family members. Cronyism among co-ethnics has been documented particularly in areas where there is inter-ethnic competition for resources. This kind of ingroup favoritism occurs frequently in the government sector, where the costs of co-ethnic discrimination are more diffuse than in private firms, and less likely to reflect poorly on the employer (e.g., Fafchamps and Labonne 2017). Ethnic cronyism is linked with inter-ethnic conflict: Hjort (2014) finds that intra-ethnic favoritism within a firm worsens in the wake of inter-ethnic conflict in the society. When the firm he studied implemented a payment rule designed to make ingroup favoritism more costly,

productivity increased in heterogeneous teams, but it was reduced in co-ethnic teams. This result again shows that cronyism can have both positive and negative effects on productivity, and policies designed to discourage it also can have mixed results for efficiency.

The effect of social ties on productivity can be difficult to disentangle using observational data. This has led many to rely on field experiments within firms to uncover the causal effect of cronyism on productivity. Bandiera et al. (2011) survey these studies, focusing primarily on a series of their own experiments with a fruit producer in the UK. They show that social ties complicate the effect of incentives on productivity in interesting ways. For example, compensating workers based on their relative performance reduces overall productivity, and the negative impact is stronger in the presence of social ties. More productive workers reduce their productivity, effectively internalizing the external impact on other workers' earnings associated with their own higher relative performance. Their most relevant study deals with the impact of managerial incentives on cronyism and productivity. When managers receive incentive pay, they select workers based on their productivity, ignoring social ties. However, when managers are paid a fixed wage, they are more likely to select workers with whom they have social ties, and those workers appear to reciprocate; these workers are nine percent more productive than when managed by a more arms-length manager (Bandiera et al. 2009). These results show clearly that cronyism/nepotism can have both positive and negative effects – decreasing productivity of a work group, as less productive workers are selected, but increasing those workers' productivity over what it would be in a team without social ties.

Ingroup favoritism has also been addressed using lab experiments. Many of these studies use artificial groups, created in the lab using the Minimal Group Paradigm first proposed by Tajfel and Turner (1979). Minimal groups are formed using student subjects' preferences about artwork or color, and thus would seem to have little effect on subjects' perceptions of social connections. However, in a meta-analysis of lab and lab-in-the-field experiments, Lane (2016) reports that the extent of ingroup favoritism varies considerably by the type of group, with lab-created artificial groups exhibiting some of the strongest ingroup discrimination. This study also finds that social groups exhibit stronger ingroup favoritism than groups based on ethnicity or nationality.

In a survey of theoretical and experimental research on group identity, Charness and Chen (2020) provide an excellent overview of the subject. They note that studies using minimal

groups tend to show greater generosity toward ingroup members, but studies with naturally occurring groups show considerable variation, and results depend on the nature of the groups. For example, differences in social status can lead to favoritism toward the higher-status group, as well as reduced ingroup favoritism or cooperation among the lower-status group (e.g., Tanaka et al. (2016); Li et al. (2017)).

Strong social ties also have been studied explicitly in the lab. Brandts and Sola (2010) recruit friends for their study, and find substantially higher reciprocity among self-identified friends using a three-person trust game. The level of reciprocity is sufficiently high to warrant the selection of friends as partners, even when their efficiency is, by design, lower. In this setting friendship is a strong enough social tie that it trumps any productivity differences: The manager earns the highest return from putting greater trust in a known friend, regardless of the friend's productivity. The strength of friendship is further illustrated in study of children aged 6-8 and 10-12. Belot and van de Ven (2011) demonstrate that younger children are more likely to select friends as group members regardless of performance. As in the previous study, they find that favoritism improves performance, as friends who are selected exert greater effort.

While most studies focus on ingroup favoritism by comparing levels of cooperation between ingroup and outgroup partners, Currarini and Mengel (2016) distinguish two manifestations of ingroup favoritism: a preference to associate with others in the same group (homophily), and greater generosity toward ingroup members (which they term 'ingroup bias'). In one treatment subjects indicate a stated preference for an ingroup match, and, in another treatment, their willingness to pay for an ingroup match is elicited. Their study uses artificial groups and relies on a subset of discrete games from an earlier study to test for generosity and reciprocity (selected from Charness and Rabin (2002), similar to Chen and Li (2009)). Subjects play multiple games with different matches. They find a strong preference for homophily among a large fraction of their subjects, who both state a preference and show a higher willingness-to-pay for an ingroup match. Subjects are more generous with ingroup members when matches are randomly generated, but this difference largely disappears when pairs are endogenously matched according to their elicited preferences. They also find that risk aversion predicts homophily. (revisit after results)

In a second review, Li (2020) surveys identity research with more of a labor market orientation. Her survey includes many studies that examine ingroup favoritism across different

game settings. She notes that, in a trust-game setting, many factors affect the extent to which ingroups are trusted relative to outgroups; however, none address our key question involving differential productivity. Closest to our own research, two studies use different games and minimal groups to study related questions. In a labor market game similar to a gift exchange market, Dickinson et al. (2018) shows that choice of an ingroup partner in hiring is rewarded by higher effort on the part of the employee. When employers are allowed to "rank" potential employees based on a number of factors, lower effort costs partially offset ingroup favoritism. In addition, Jiang and Li (2019) use a principle-agent game with hidden actions, showing that revenue sharing is higher with an ingroup agent.

These studies show that strong friendship ties as well as minimal groups affect selection and reciprocity in groups. However, they do not address our key question of whether a preference for ingroup pairing is maintained in the face of exogenous productivity differences, and whether a preference for the ingroup is warranted when their productivity is lower. Nor do they deconstruct the relative strengths of beliefs about reciprocity and or greater altruism toward the ingroup, as motives for selecting ingroup members under conditions where ingroup members are equally or less efficient. We design an experiment to make this distinction. Our design, described in detail below, allows us to identify motives for engaging in cronyism and its impact on subsequent trust and reciprocity.

EXPERIMENTAL DESIGN

We utilize the standard trust game (Berg et al. 1995) as a model of the employment relation, and introduce groups and differences in partner efficiency to test the effects of cronyism with and without productivity differences.[3] In the standard game, two players are endowed with equal resources. The first mover in the game has the opportunity to send resources to a second mover; the amount sent is tripled by the experimenter on the way. The second mover then decides how much (if any) to return to the first mover. By design, all proposers (first movers), are members of a well-defined ingroup. The "outgroup" has no identity: it is a random individual from the population who is not an ingroup member. To implement cronyism, we allow the

[3] This game has been used extensively to measure trust and trustworthiness in the field. See for example, Ashraf et al. (2006); Barr (2003); Ben-Ner and Putterman (2001); Goette et al. (2006). See Bellemare and Kroger (2007) for a trust game with a representative population.

proposer to indicate a preference between a responder who is an ingroup member or one who is not a member of the ingroup. To implement productivity differences, we vary the relative productivity of ingroup responders to be either equal to or less than non-ingroup responders.

Our treatment of groups is somewhat different from most prior studies, particularly those using artificially-induced groups. We rely on a naturally occurring ingroup: the subject's residential college. The other participants, non-ingroup members, are those who are not members of the residential college. Entering Rice students are randomly assigned to one of eleven residential colleges and they remain in that residential college throughout their stay at Rice. Colleges have their own dining halls, dorms, and faculty advisors, and an intensive orientation period, all of which cultivate a strong group identity. This primary group affiliation is the basis for ingroup assignments in the experiment. Based on prior work in psychology and sociology, we do not identify an outgroup. The non-ingroup members are made up of miscellaneous students from different residential colleges.

The experiment uses a 2x2 factorial design with four treatments, summarized in Table 1. The first factor, Partner Matching, has two conditions: "*Random*" and "*Choice.*" In the first condition a first mover is randomly matched with either an ingroup member or an unlabeled non-ingroup member. The second condition creates the opportunity for cronyism by allowing a first mover to choose between an ingroup member and a non-ingroup member. This factor is included in the design because it allows us to examine the impact on second-mover reciprocity depending on whether they were "chosen" by the first mover, or simply randomly matched.

Table 1. Study Design. Number of subjects in each treatment are given in parentheses.

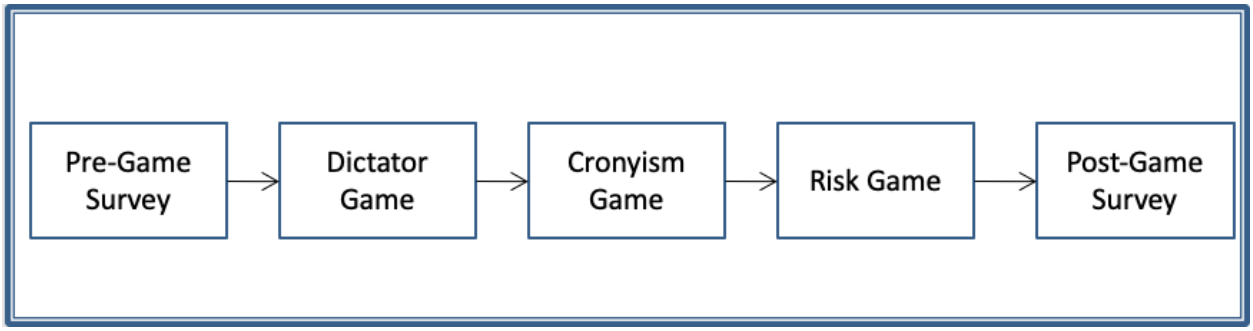
Partner Matching		Ingroup Efficiency	
		Equal	**Low**
	Random	*Baseline* (n=68)	*Differential Efficiency* (n=72)
	Choice	*Non-Costly Cronyism* (n=78)	*Costly Cronyism* (n=78)

The second factor, Ingroup Efficiency, varies the efficiency of ingroup members and we label these conditions as: "*Equal*" and "*Low*." In the *Equal* efficiency condition the standard trust

game multiplier of 3 applies to both ingroup members and others. In the *Low* efficiency condition, non-ingroup members retain the multiplier of 3, while ingroup members carry a multiplier of 2.5. In this condition we make the ingroup member of lower quality in order to test the impact of costly cronyism. Each treatment is conducted with an independent sample in a between-subjects design.

Figure 1 shows a timeline of events in each session. The experiment begins with a pre-game survey (collecting demographic information) followed by the Dictator Game, the Trust Game, a Risk-Preference Elicitation, and then a post-game survey (collecting game specific information). Each of these is explained below. An unrelated game, not used here, followed the Dictator Game and preceded the Trust Game.

Figure 1: Experiment timeline



The Cronyism Trust Game

Proposers and responders in the modified trust game are endowed with 20 tokens (with each token equal to $0.50). The four treatments are described below. In all cases subjects know what treatment they are in (that is they know the matching protocols and efficiency levels) before the trust decisions are made.

In the *Baseline* treatment, the proposer chooses how many tokens to send to a responder and guesses the number of tokens that will be sent back by the responder. Both ingroup and non-ingroup responders have the same multiplier (three times what was sent). Proposers do not choose a responder group, but instead are informed that there is a 50% chance they will be matched with either group. Proposers make decisions for both types of partners, one choice for an ingroup member and one choice for a non-ingroup responder, knowing that the relevant

choice will be implemented, depending on which type of responder they are matched with. The same is true for their beliefs about what will be returned. Those guesses are incentivized in order to elicit beliefs about how much will be returned. Using a simple binary scoring rule subjects are given a bonus of 2 tokens if their guess is correct. In a post-game survey for this treatment, and before they learn their payoffs, proposers are asked which group they prefer to be matched with if they could choose; however, their response has no bearing on the match and is not incentivized. It is conceivable that by having subjects make choices for both ingroup and non-ingroup members this could signal the purpose of the experiment. For each subject we randomized the order of presentation. Once a subject made their first choice, they were asked to make their second choice and were not allowed to return to their first choice. We thought this was the best approach to minimizing efforts to exhibit a lack of discrimination.

In all treatments responders then decide how much to send back for all possible amounts received. They also guess how much the first mover will send them, and this prediction is incentivized in the same manner as with proposers. Depending on the treatment, responders were informed they were either randomly matched or their type was chosen by the proposer.

The *Differential Efficiency* treatment is conducted in the same way as the *Baseline*, except that ingroup members are assigned lower efficiency (a multiplier of 2.5) while the other responders retain a multiplier of 3. We again elicit proposer decisions for both types of responders, and ask their preferred matching.

In the *Non-Costly Cronyism* treatment proposers also determine the amount sent and guess the amount returned for each type of responder. In addition, they make a third decision by choosing between an ingroup member or a non-ingroup member. We elicit decisions for both types of responders because in the matching protocol (explained below) some first movers could end up with their second choice. Both types of counterparts have the same efficiency (a multiplier of 3). With this treatment we can assess the extent to which ingroup members are selected absent any cost to the choice.

In the *Costly Cronyism* treatment, proposers are informed that if they are paired with an ingroup member there is lower efficiency (a multiplier of 2.5 versus 3 is used). Otherwise all aspects are the same as in the *Non-Costly Cronyism* treatment. In this treatment we can test whether there is a preference for the ingroup given the lower quality of ingroup responders.

The two *Choice* treatments allow us to observe cronyism (a preference for the ingroup) if it is not costly and examine how cronyism is affected when it is costly. Because we have proposers' decisions for both ingroup and non-ingroup responders in all treatments, we can compare behavior towards the two types of responders, and examine how that behavior changes when cronyism is costly. The Random matching treatments also allow us to detect and separate out any effects that are attributable merely to the fact of partner choice, which has been shown previously to increase trust (Slonim and Garbarino 2008). Thus we can identify people who prefer a less productive ingroup member, and observe their trusting behavior towards members of both groups. Additional controls, described below, allow us to distinguish motives for cronyism. Appendix A contains screenshots of the proposer and responder decision screen, respectively (figures A.2 and A.3).

Preference controls

We conduct two additional incentivized preference measures to use as controls in our analysis: *ingroup favoritism*, which we use as a control for the desire to directly confer benefits on the ingroup, and *risk aversion*, which we use to control for the possibility that subjects may perceive non-ingroup members as "riskier" partners.

Dictator game: To directly measure a subject's ingroup favoritism, we use a variation of the standard dictator game. Proposers are endowed with 20 tokens (each worth $.50 USD) and are asked to make two separate dictator-game decisions: how much they want to send to an ingroup responder, and how much they want to send to a non-ingroup responder. They make this decision simultaneously (on a single screen, with the order randomized). The instructions for this game parallel those for the trust game, and use the *Random* or *Partner Choice* matching. In the *Partner Choice* condition, proposers select the group (ingroup or other) their first choice of the type of responder to whom their tokens will be allocated. The protocol for the *Random match* condition is identical, except that the recipient type is randomly chosen. (Recall that these games are randomly ordered; in order to avoid confusion, the Random or Partner Choice procedures are the same for the trust and dictator components.)

Risk aversion: We implement a simple measure of risk aversion as in Dave et al. (2010), wherein subjects are presented with six gambles and asked to select the one they most prefer. Each gamble has a 50% chance of paying out a low amount or a high amount. The gamble selected

gives the measure of risk aversion, with a choice of Gamble 1 indicating extreme risk aversion, and the choice of Gamble 6 indicating risk-seeking.[4] This measure is used as a control variable in the analysis, because previous studies have (sometimes) shown a relationship between risk tolerance and the decision to trust (e.g., Eckel and Wilson 2004; Shechter 2007). We also speculate that risk aversion might play a role in partner preference, with non-ingroup members seen as the riskier option.

EXPERIMENTAL PROCEDURES

The experiment was carried out at Rice University and makes use of Rice's Residential College system.[5] Subjects were recruited in the dining halls for specific residential colleges to compose each session. In every session, regardless of treatment, all of the proposers, and half of the responders, were from a single residential college: the rest of the responders were randomly drawn from the Rice population. *Thus, all proposers in the session are members of the ingroup*. Half of the responders were from the proposers' residential college (ingroup) and the other half were drawn from various other residential colleges (the non-ingroup). Different residential colleges constituted the ingroup across sessions. While subjects signed up for a day and time that was most convenient for them, collusion was unlikely. Subjects did not know what the experiment was about until they were given instructions. Because subjects from the same college were randomly assigned to their roles and those roles were private, it was impossible to observe who in the session was a first or second mover.

Sessions were conducted at the Behavioral Research Lab at Rice University in April and October 2009, and October 2010. Decisions were made via a computer interface, programmed

[4] Appendix A displays a screenshot of the gambles viewed by the subjects, showing the high and low payoffs for each gamble. The gambles can be ranked, and have payoffs as follows: Gamble 1, 20/20; Gamble 2, 28/16; Gamble 3, 36/12; Gamble 4, 44/8; Gamble 5, 52/4; Gamble 6, 58/-2. Gamble 1 has a guaranteed payoff, and Gambles two through five show an increase in variance and expected return over the previous option. Gamble 6 has an increase in variance over Gamble 5, but holds the expected value the same. If the risk game was selected for payment, subjects were directed to the payment area and individually rolled a six-sided die. A roll of 1 through 3 gave them the low amount listed for their chosen gamble, and the roll of 4 through 6 gave them a payout of the high amount.

[5] Basing our groups on Rice University's residential college system is useful as: (1) we can implement the partner choice mechanism with an ingroup but no identifiable out-group; (2) the ingroup identity is salient. At the time the study was carried out, the colleges averaged 340 residents. As noted earlier, residents are randomly assigned to and remain in their college for four years. Each college contains a random selection of majors. College affiliation is a primary source of identity. While students can transfer from their college, less than 2 percent do so during their time at Rice. For more information on the residential college system, please see: http://students.rice.edu/students/Colleges.asp

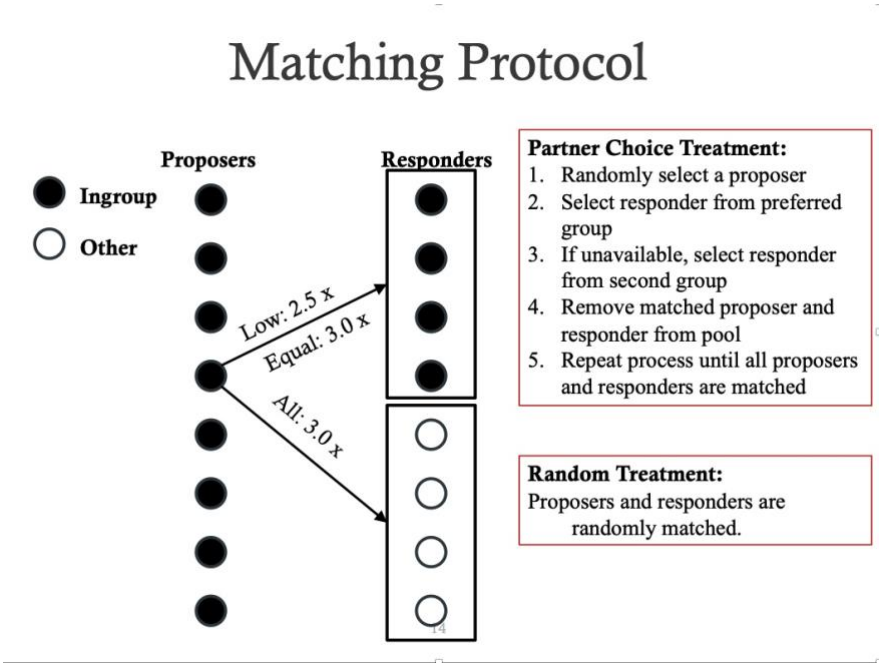
using a mix of Coldfusion, Javascript and HTML. A total of 296 subjects participated in the study. There were 17 sessions, with an average of 16 subjects in each session. In all cases, ingroups were labeled with the name of a specific residential college while the non-ingroup remained unlabeled except as other Rice students. All of the eleven colleges are represented among the subjects, with ten represented as ingroups.

As detailed above, the experiment consisted of an initial short entry survey (collecting demographic information), and the three games (Dictator, Trust/Cronyism, and Risk described above), followed by a post-game survey. Each game started with instructions, two examples, and a short quiz to test understanding, followed by the game itself. To minimize order effects we randomized the order of the games: subjects had an equal chance of starting with the dictator, cronyism, or risk game. Second, we randomized the order of the groups: each subject made ingroup decisions on the left side of the screen or the right side (with the other decisions on the adjacent side). Third, we randomly selected one game (dictator, cronyism, or risk) for payment at the end of the session, so as to induce independence in decisions across games.

Upon arriving at the lab, subjects signed in and were asked to confirm their residential college name and then promptly seated at a terminal. Instructions referred to ingroup subjects by the name of their college (for example, "individuals in ** College") and others were referred to as "individuals *not* in ** College but from the Rice University population." No feedback was provided on earnings between tasks during the experiment.

Subjects were assigned to one of two roles at the beginning of the session: proposer or a responder. Subjects kept this role through the entire session. Importantly, in every session, all proposers belonged to the ingroup (i.e. were members of the residential college constituting the ingroup for that session), while half of the responders belonged to the ingroup. *Thus, all proposers in the session are members of the ingroup*. Half of the responders were from the proposers' residential college (ingroup) and the other half were drawn from various other residential colleges (non-ingroup). Different residential colleges constituted the ingroup across sessions. All participants were aware of this. Recall that in the *Choice* conditions, proposers had the option to indicate their first choice for the group that their counterpart would be drawn from for each task. In the *Random* match conditions, subjects were not given this option, and were told that there would be "approximately a 50% chance" that they would be matched with a responder from

either group (i.e., their own group or not). Figure 2 illustrates the matching protocol used in the experiment.



Note: Proposers were always from the ingroup. Half of the responders were from the ingroup and the remainder were not.

Figure 2. Matching protocol used for assigning proposers to responders.

Subjects were paired using a variation of the matching algorithm developed by Castillo and Petrie (2010), also summarized in Figure 2. For the *Choice* partner matching conditions, one proposer was selected at random. Her preferred group choice was noted, and then a responder was randomly selected from her preferred group. Next, a second proposer was randomly selected and given his first choice of group from the remaining candidate responders. This process continued until each proposer was matched with a responder in the session. In the event that the pool of responders from any particular group was exhausted, but still had been requested by a proposer, then the proposer was matched with a responder from the alternate group. In the *Random* match treatments, each proposer was matched with a responder at random. The matching algorithm was triggered once all subjects had completed all tasks and the surveys. Each proposer was matched with a single responder. At the end of the session, the experimenter entered the lab area and asked for a volunteer. The volunteer rolled a die to determine the game that would be paid for in the session.

RESULTS

In this section we first establish that, under our experimental design, cronyism is common, even when it is costly. Second, we turn to deconstructing the motives for engaging in cronyism. Finally we ask whether or for whom cronyism is a profitable strategy.

1. Do subjects engage in cronyism?

Our first question asks whether subjects choose members of their ingroup. We address this question first because, if cronyism does not exist, our experimental model will have failed to create an environment where we can explore its causes. Not surprisingly over 80 percent of proposers prefer (in *Random* partner matching) or choose (in *Choice*) an ingroup member as their partner in the *Equal* efficiency conditions. When ingroup efficiency is *Low* (i.e., when cronyism is costly), across both the *Random* and *Choice* (cronyism) partner matching conditions, only 44 percent of the proposers prefer or choose them as their partners, a significant reduction (two-sample proportions test $z=5.19$, $p<0.001$). However, not all subjects avoid the less-efficient ingroup member. Strikingly, even when ingroup members are less efficient, a large proportion of subjects still prefer/choose them as partners.[6] Notably, there are no significant differences in preferences across matching conditions (*Random* v. *Choice*) holding constant the efficiency of the ingroup.

[6] While the choice of partner in the Partner Choice treatment has the potential to affect payoffs, there was no way to incentivize the stated preference for the preferred partner. Nevertheless, we compare these preferences across treatments. Given the absence of incentives and the potential for social desirability in choosing a fellow residential college member, we expected that the stated preference might be substantially higher than the chosen partner, overstating the overall ingroup preference. But these two levels are remarkably similar. Figure 3 shows that just over 80 percent prefer the ingroup member in both cases. This suggests the stated preference is not substantially exaggerated.

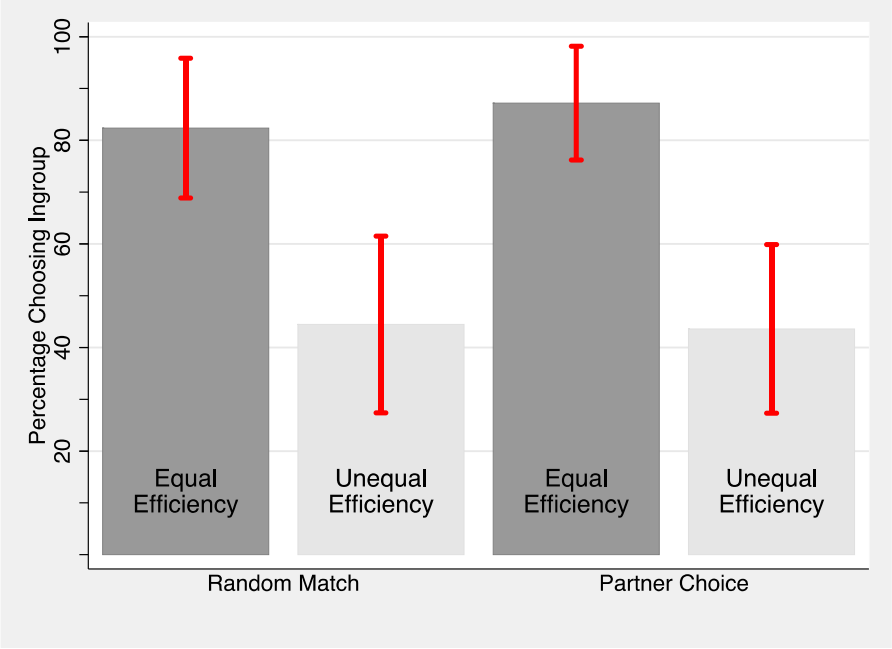


Figure 3: Percentage of subjects choosing/preferring ingroup members (95% confidence interval)

2. What are the motives for cronyism?

Now that we have established that cronyism exists in our setting and persists even when it is costly – that is, the ingroup member is selected even when their efficiency is lower – we turn to deconstructing the motives for choosing the ingroup. We proposed two possibilities: favoritism (greater altruism toward the ingroup) and beliefs (expectations of higher reciprocity). These were elicited during the experiment, but at different points in the protocol. Table 2 shows the average amounts sent by proposers to ingroup and non-ingroup members in the dictator game, which was conducted as a separate game, and beliefs about what they expected to be returned, which was elicited during the trust game component of the experiment. Turning to the first column we see consistently higher giving to the ingroup. In the last two columns we also see a consistent difference in beliefs about what the ingroup will return. One column takes the average expected return in monetary units. The last column calculates the percentage the first mover expected to be returned conditional on what was sent. All the differences, with the exception of the *Costly Cronyism* treatment, are statistically significant. Not surprising is that the lowest averages sent and the lowest expected return are in the Differential Efficiency treatment where the ingroup multiplier

is lower and where partners are randomly assigned. This indicates subjects are sensitive to the multiplier and matching protocol, but the ingroup/non-ingroup differential is maintained.[7]

Table 2. Favoritism and Beliefs

Treatment (n)	Group	Average Sent in Dictator Game (**Favoritism**)	Average Expected Return (**Beliefs**)	Average Expected % Return (**Beliefs**)
Baseline (34)	Ingroup	6.59† (5.96)	18.68** (14.69)	51.13 (6.63)
	Non-Ingroup	6.12 (6.32)	16.12 (13.92)	49.95 (7.40)
Differential Efficiency (36)	Ingroup	4.72*** (3.80)	11.55* (11.19)	53.15** (5.91)
	Non-Ingroup	2.83 (3.22)	9.17 (11.60)	41.82 (4.89)
Non-Costly Cronyism (39)	Ingroup	7.12** (5.13)	22.46** (16.78)	63.60** (6.52)
	Non-Ingroup	6.10 (4.79)	18.00 (17.22)	53.45 (5.63)
Costly Cronyism (39)	Ingroup	6.56 (5.47)	14.08 (12.02)	49.85 (5.34)
	Non-Ingroup	6.05 (4.97)	14.72 (13.11)	51.62 (6.90)

Note: Average amounts sent in the dictator game, average expected return and average expected percentage return in the trust game by treatment and group. The asterisks indicate the pairwise statistical tests between the ingroup and non-ingroup. All tests are pairwise t-tests. †p<.10, *p<.05, **p<.01, ***p<.001

We next examine factors affecting the choice of partner, using only the *Choice* partner-matching data. Table 3 reports marginal effects from probit regression results, where the dependent variable takes on a value of 1 if the proposer's first choice was an ingroup member and zero otherwise. (Analysis of partner preferences in the *Random Match* treatments shows a similar pattern, and can be found in Appendix Table B3).

[7] We acknowledge that the dictator game giving is lower overall in the Differential Efficiency treatment but can only speculate as to why. Note that the treatment is not introduced until after the dictator game, so there is no way for the difference to be a "treatment effect". We have checked for order effects, sessional effects and effects due to residential colleges or current events. We cannot find anything systematic that would explain the difference.

Table 3: Probability of selecting ingroup members in the Partner Choice conditions
(Marginal effects)
Dependent variable: Partner choice (1 = Chose ingroup member)

	1	2	3	4
Ingroup Efficiency	-0.391***	-0.243**	-0.266***	-0.278***
(1 = Low)	(0.065)	(0.086)	(0.079)	(0.072)
Beliefs: Expected Net Return		0.040**	0.037*	0.037**
(Ingroup less other)		(0.015)	(0.015)	(0.012)
Favoritism: Dictator Game			0.063	0.060+
(Ingroup less other)			(0.038)	(0.036)
Risk Preferences (1-6)				-0.066**
(6 = Risk seeking)				(0.026)
Gender				0.124
(1 = Female)				(0.088)

Note: ***p<.001, ** p<0.01, * p<0.05 +p<.10. Probit specification, standard errors in parentheses. Table reports marginal effects. Dependent variable takes on a value of 1 if subject selected ingroup member as partner in the trust game. Data is from the *Choice* partner matching treatments. See footnotes 4 and 5 for variable definitions. Coefficient estimates can be found in appendix Table B2.

A dummy variable indicates the level of *Ingroup Efficiency*, with a value of 1 reflecting a *Low* multiplier for the responder (costly cronyism). Our primary independent variables capture beliefs regarding the performance of the trustee, using the proposer's elicited beliefs about the amount to be returned by the responder,[8] and favoritism towards ingroup members, using the dictator game decisions.[9] We also control for risk preferences, as described above. This variable takes on values 1-6, reflecting the gamble selected.[10] Finally, we add a control for gender.

All models include a variable indicating the *Low* ingroup efficiency condition (i.e., costly cronyism). Model 1 includes only the treatment variable, Model 2 adds the beliefs variable, and

[8] Beliefs are measured as follows. After subjects make their trust decisions, we inform them the total available to their ingroup and their non-ingroup responders, respectively. We then ask them how much of that total they expect back from each responder. Subjects are paid a bonus for guessing correctly, and zero otherwise. The variable is calculated as the difference between the amount returned (net of amount sent) for the ingroup minus this amount for the non-ingroup responder. Qualitatively similar results are obtained when using the difference in percent expected return (expected amount returned divided by multiplied amount sent), except that 24 observations are lost because of zero denominators in one or more of the ratios.

[9] Favoritism is measured using the dictator game and defined as the amount donated to an ingroup counterpart less the amount donated to a non-ingroup counterpart, which is positive if giving favors the ingroup member.

[10] We use a simple index of risk preferences using the gamble chosen as an index of risk tolerance, where 1 = choice of the zero-variance gamble and 6 = the most risky gamble. Alternative measures (such as using the median of the CRRA range implied by the chosen gamble) give the same qualitative result.

Model 3 adds the favoritism variable. Model 4 adds risk preferences and gender as controls. We first note that low efficiency significantly reduces the preference for an ingroup counterpart, indicated by the coefficient on the treatment dummy. This result replicates what we observed in figure 2: when ingroup members are less efficient, subjects are less likely to choose ingroup members as partners ($p<0.01$). We also find that subjects who believe their ingroup decision will be more profitable are more likely to select an ingroup counterpart, as indicated by the positive, significant coefficient on the beliefs variable ($p<0.01$ in Models 2-4).[11] Thus differential beliefs regarding ingroup partner performance are positively related to cronyism.

We also find weak support for altruism as a determinant of partner choice: proposers who favor their ingroup members more in a dictator game are likely to select them as partners (although the effect is marginally statistically significant only in model 4). Risk aversion, but not gender, plays a role in this decision. Those who are risk tolerant are less likely to select someone from their ingroup, confirming our expectations.[12] These results suggest that beliefs about one's partner and not favoritism plays an important role in cronyism.[13] Table 2 points out that those beliefs indicate higher expected return from the ingroup.

3. What is the impact of cronyism on trust?

In this section we analyze the amount sent by proposers in the trust game across all four treatments. This allows us to estimate the impact of cronyism on trust. Recall that all proposers are ingroup members, and each proposer decides for ingroup and non-ingroup members. We estimate tobit models (to account for censoring at 0 and 20 tokens) for the amount sent to the responder in the trust game, pooling decisions from all four treatments and clustering standard errors at the individual level. In addition to the treatment variables, we include controls for whether the target responder is an ingroup member, whether the target responder is the preferred partner type, our two measures of motives for cronyism (beliefs about the amount to be returned,

[11] In analysis (available on request) we see that this effect does not vary by treatment ($p=0.70$ for the interaction term between Beliefs and Ingroup Efficiency).

[12] A relationship between risk aversion and a preference for an ingroup partner has been shown in previous studies. For example, in setting similar to ours, Currarini and Mengel (2016) find that risk aversion is positively associated with a higher willingness to pay to be matched with an ingroup member. In a related result, Lee (2017) shows that higher risk aversion is associated with greater implicit bias.

[13] Table B.3 in the appendix shows the same analysis for the Random match conditions, where subjects were simply asked about a preference for partner in the post-game survey. We relegate this analysis to the appendix to simplify the presentation of the data, allowing us to focus on main results. There we find similar effects

and favoritism measured as dictator game giving), risk preferences and gender. Table 4 displays the results.

Table 4: Trust - Tokens sent by proposer

VARIABLES	(1)	(2)	(3)	(4)	(5)
Partner Choice	1.346	-0.600	-0.593	-1.769	-1.769
(1 = Choice)	(1.564)	(2.429)	(2.426)	(1.356)	(1.267)
Ingroup Efficiency	-3.267*	-5.279*	-5.280*	-0.452	-0.934
(1 = low efficiency)	(1.561)	(2.394)	(2.389)	(1.326)	(1.375)
Partner Choice X		3.802	3.797	1.807	2.136
Ingroup Efficiency		(3.129)	(3.124)	(1.678)	(1.633)
Ingroup			1.484**	0.389	0.424†
(1 = Sent to ingroup)			(0.418)	(0.247)	(0.239)
Preferred Partner Type			1.342**	-0.490*	-0.431†
(1 = Preferred/chosen responder)			(0.423)	(0.235)	(0.226)
Beliefs				0.519**	0.498**
(Expected amount returned)				(0.043)	(0.043)
Favoritism				0.327**	0.318**
(Dictator game giving)				(0.116)	(0.107)
Risk Preferences					0.312
(1-6)					(0.293)
Gender					-2.257**
(1=Female)					(0.773)
Constant	10.361***	11.406***	9.990***	0.311	0.563
	(1.587)	(1.969)	(1.974)	(1.386)	(1.339)
Observations	296	296	296	296	296
Pseudo R^2	0.006	0.007	0.010	0.221	0.234
log Likelihood	-836.8	-835.4	-833.4	-655.7	-644.5

Robust standard errors in parentheses
** p<0.01, * p<0.05, †p<0.10

Note: Tobit specification, robust standard errors in parentheses. Dependent variable is the number of tokens sent in the trust game. Tokens sent are censored at 0 (38 observations) and 20 (59 observations).

Model 1 includes only the dummy variables for the two factors (Partner Matching = 1 for the *Choice* partner-matching condition, and Ingroup Efficiency = 1 for the *Low* efficiency condition), while model 2 adds an interaction term. Model 3 adds variables for whether the decision is for an ingroup responder and whether the decision is for a responder that is the preferred partner. Model 4 adds motives variables, and Model 5 adds gender and risk controls.

Being in the Partner Choice condition does not significantly impact levels of trust, in

contrast to the findings of Slonim and Garbarino (2008). However, lowering the efficiency of the ingroup member significantly decreases trust by 3.26 tokens (Model 1, $p<0.05$). Adding an interaction term in Model 2 does not change the sign or significance of the other variables, and is itself insignificant. Model 3 adds controls for whether the responder is a member of the ingroup (*Ingroup*), and whether this is the responder who was indicated as a first choice by the proposer (*Preferred Partner Type*). These variables show that subjects trust their ingroup significantly more, sending an additional 1.48 tokens, and also send more to their preferred partner, sending 1.3 tokens more. Thus ingroup preferred partners are trusted the most. Model 4 adds variables that reflect our hypotheses about the causes of cronyism. We see that Beliefs (expect amount returned) plays a significant role in determining the amount sent, with a one-token greater expected amount returned associated with a .5 token increase in amount sent. Altruism toward the ingroup (Favoritism) also is positively related to the amount sent. Accounting for differential beliefs and favoritism reduces the magnitude and significance of all the other variables. Finally, model 5 adds additional controls, for risk aversion and gender. The risk measure is insignificant, and the gender variable carries a negative sign, indicating that female proposers trust less than their male counterparts. Both results are consistent with prior findings.[14]

The introduction of Beliefs and Favoritism in Models 4 and 5 reduces the significance of Preferred Partner and changes its sign. It also reduces the effect of sending to the ingroup. This is because beliefs about the preferred partner are captured by the Beliefs variable, and sending to the ingroup is bound up in the favoritism shown to the ingroup in the dictator game.

Overall, we find that proposers are responsive to four things. First, they are responsive to the efficiency of responders, not surprisingly sending more when the multiplier is higher. Second, they send more to their preferred partner type, especially when their preferred partner type is also someone from their ingroup. Third, beliefs about the amount returned are positively related to trust. Finally, those who show more favoritism toward their ingroup by sending more to their ingroup in the dictator game also show higher levels of trust. Both beliefs and favoritism modulate the direct effect of ingroup and preferred partner type. This leads us to further dissect

[14] For gender differences in trust, see the survey by Croson and Gneezy (2009). For risk aversion and trust, Eckel and Wilson (2004) and Schechter (2007). Note that beliefs are elicited subsequent to the trust decision and so are likely to be endogenous. The debate on whether this variable should be included in the analysis of standard trust decisions has been inconclusive. Costa-Gomez et al. (2014) design an experiment to generate appropriate instrumental variables and confirm the causal effect of beliefs on trust. A similar strategy for beliefs in public goods games is demonstrated in de Oliveira et al. (2016).

both beliefs and favoritism in subsequent analysis.

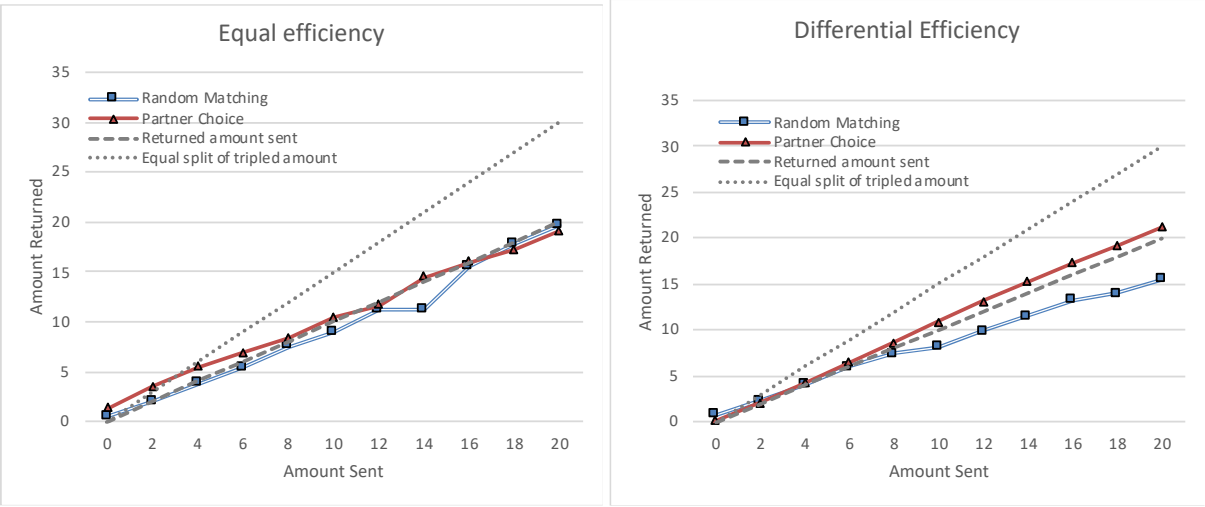
4. What is the impact of cronyism on reciprocity?

Now we turn to responder trustworthiness (reciprocity). Recall that responders made decisions for every possible amount sent by the proposer, yielding a total of 11 decisions. Figures 4 A and B display reciprocity decisions (tokens returned), divided into non-ingroup responders (shown in the two panels of Figure 4A) and ingroup responders (shown in the two panels of Figure 4B). (Recall that all proposers are members of the ingroup). The graphs use the strategy-method responder data to show response functions, with the amount sent by the proposer on the horizontal axis and the amount returned by the responder on the vertical axis. (Of course, the actual earnings depend on the amount the proposer actually decides to send – that is, the specific point on the response function.) The dashed lines represent commonly-used strategies observed in other studies – benchmark strategies. Behavior would fall on the heavier dashed line, labeled "Returned amount sent," if subjects just returned the amount sent by the proposer, keeping all of the surplus for themselves; therefore, any observations above this line indicate that "trust pays," in the sense that the proposer profits from his decision to trust. Behavior would fall on the lighter dashed line, labeled "Equal split of tripled amount," if subjects divide the multiplied amount equally between themselves and the proposer. In each panel, the two remaining lines show average behavior for random matching and partner choice. The line with square markers indicates the average behavior of subjects under random matching, and the line with triangular markers indicates the average behavior of subjects under partner choice.

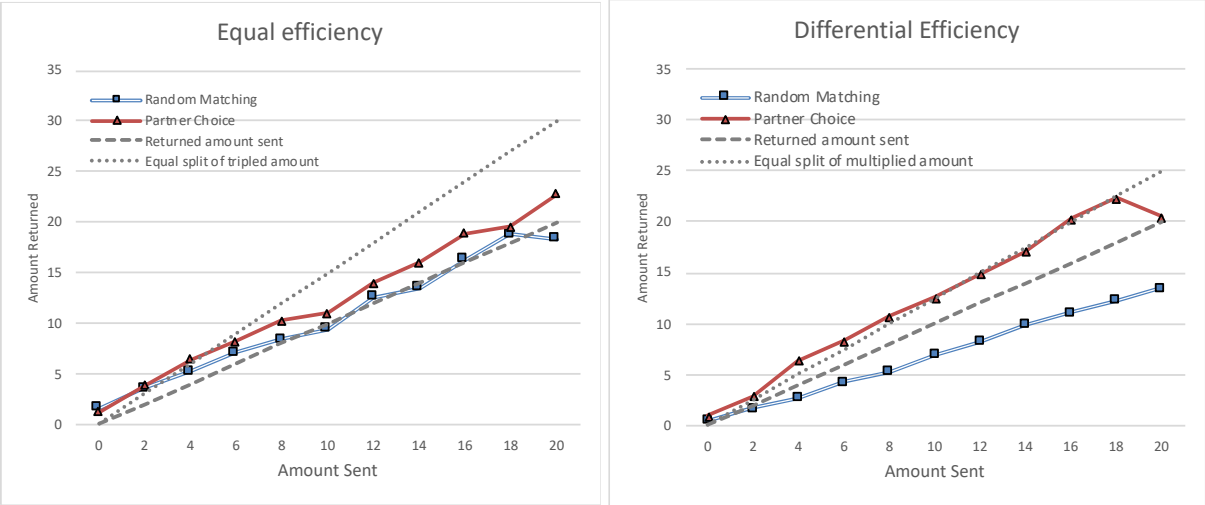
The panels for Figure 4A detail the average returns for non-ingroup responders and for Figure 4B detail average returns for ingroup responders. The left panels for both figures deal with the case in which there is equal efficiency (equal multipliers). The right panels for both figures turn to settings in which there is differential efficiency (the ingroup has a lower multiplier). Three of the four panels tell the same story. Reciprocity hovers around the "Returned amount sent" benchmark, with random matching slightly lower than partner choice. This shows that, for non-ingroup responders, reciprocity depends primarily on the multiplied amount received by the responder and does not vary much by treatment. The right panel of Figure 4B, however, tells a different story. It shows a substantial difference in reciprocity between random and partner choice when the ingroup has lower efficiency. Ingroup responders reward the

proposer more for choosing them, and trust pays. As shown below, cronyism actually pays for those who select a less efficient ingroup member.

Figure 4: Average Returns



A: Average Returns by non-ingroup responders by treatment



B: Average Returns by ingroup responders by treatment.

Note: This figure graphs the average amount returned for each possible amount sent, using the strategy-method data on reciprocity. Each figure contains one set of treatments, along with benchmark strategies (return amount sent; return half of the multiplied amount).

We formally test the effect of the treatments on reciprocity separately for ingroup members, and for others, using a linear regression with observations for each possible amount sent to each responder, as shown in Table 5. Standard errors are clustered at the individual level

(tobit regressions with left censoring at zero give similar results). The dependent variable is the amount returned by responders. Our main independent variables are: the amount sent by the proposer, the Partner Choice treatment dummy and controls for gender and group identity (a survey question referring to how strongly subjects identify with the Residential College ingroup). The models provide separate regressions for each panel of Figure 4.

Table 5: Reciprocity: Tokens returned by responders to Ingroup and Others. The models correspond to the panels in Figure 4A and 4B.

	(1) In-group Low-Efficiency	(2) In-group Equal Efficiency	(3) Other Low-Efficiency	(4) Other Equal Efficiency
Tokens Sent by Proposer	0.881***	0.965***	0.908***	0.915***
	(0.127)	(0.121)	(0.132)	(0.135)
Partner Choice	6.257**	3.160	3.805	1.506
(1 = Choice)	(2.743)	(2.940)	(2.308)	(3.162)
Gender (D)	2.537	-2.366	0.368	-0.685
(1 = Female)	(3.310)	(3.095)	(2.471)	(3.170)
Group Identity	1.450	-0.969	1.113	1.671**
(7 = Strong ingroup identity)	(0.922)	(1.160)	(0.775)	(0.780)
Constant	-10.565**	5.748	-4.599*	-4.353
	(5.144)	(6.241)	(2.498)	(2.646)
Observations	341	352	484	451
R-squared	0.369	0.338	0.281	0.265

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

The regressions confirm what we see in the figures. First, we find that reciprocity is increasing in trust: subjects return almost one token for every token sent by proposers. Furthermore, the *Partner Choice* condition has a positive and significant impact on reciprocity only in Model 1 in which there is differential efficiency for the ingroup member. While the effect is positive in the other models, the effect is much smaller and is not significant. Thus, the effect

of *Equal efficiency* on ingroup member reciprocity varies depending on the existence of *Partner Choice*. With the exception of Model 4 neither gender nor group identity matter.

The key finding is that being able to choose an ingroup member (cronyism) has a significant and positive impact on reciprocity among the ingroup, especially when the crony has lower productivity. While a similar pattern holds for non-ingroup members, the effect is considerably smaller, and not significant. Ingroup members in the cronyism treatment send back 6.25 extra tokens on average, while others return half that amount. This indicates that ingroup members reward cronyism that favors them. Knowing that they have lower productivity, ingroup members are willing to reward generously those who choose them.

5. Is cronyism profitable?

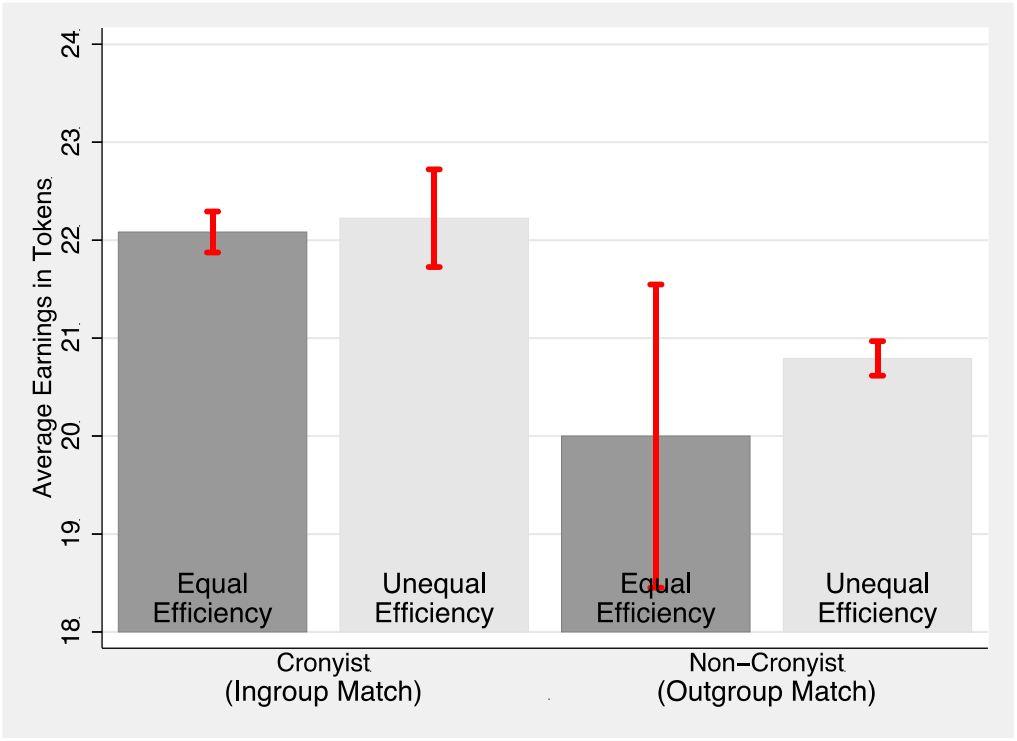
We have established that cronyism is motivated by beliefs about relative ingroup performance. We find that subjects send more to their ingroup, and that the choice of a partner has a positive impact on ingroup reciprocity. We now ask whether cronyism is profitable for ingroup members. To do this we compare expected earnings for first movers if paired with either ingroup or non-ingroup members.

Recall that each proposer makes two decisions: one for each type of responder. This allows us to calculate what the proposer would earn, conditional on their decisions for each type of responder, if partnered with their ingroup or with non-ingroup members for each treatment. We also know each proposer's choice of a partner. This allows us to check both the factual and counter-factual distribution of earnings for subjects.

Figure 5 Panel A displays the average earnings, conditional on being matched with the subject's preferred type of responder. The two bars on the left represent the average earnings for subjects who preferred someone from their own group, if matched with an average member of that group. The two columns on the right represent the average earnings for those who preferred someone from the non-ingroup, if matched with an average member of that group. Within the type of responder we break out earnings by whether subjects were in the equal or low efficiency conditions. The results are quite clear. A cronyist, choosing an in-group member, does equally well in terms of earnings no matter the level of efficiency. This is because ingroup responders compensate for their lower efficiency by increasing their level of reciprocity (effort) when chosen by a fellow ingroup member. On the other hand, if proposers preferred non-ingroup

members they received less than if they had, instead, chosen ingroup members. Their choices hurt their earnings despite the differential multiplier.

Panel A. Average Earnings for Preferred Partner Type Match



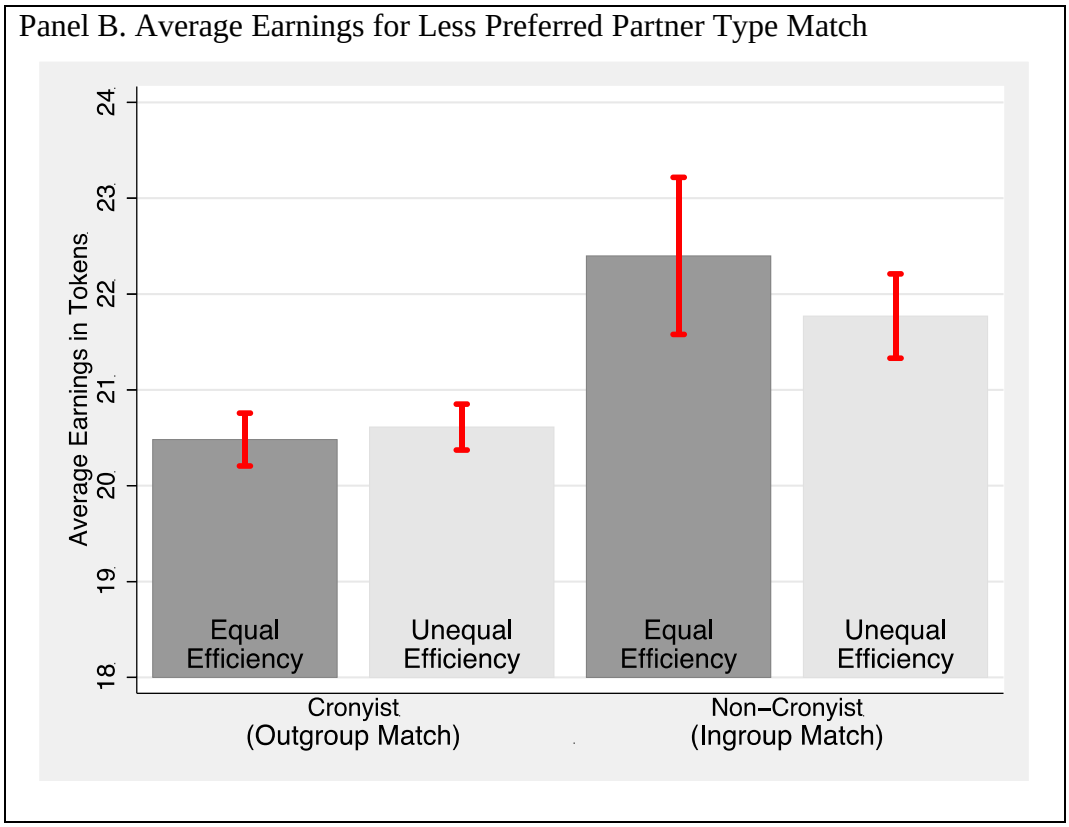


Figure 5. Average returns for preferred and non-preferred matches.

Figure 5 Panel B addresses the counterfactual. If a proposer who preferred an ingroup member was matched instead with his second choice, a non-ingroup member, the proposer was left worse off. Cronyists, those who prefer ingroup responders, have higher earnings when they are indeed matched with the ingroup partner. Somewhat counter-intutively, even those who do not prefer the ingroup would have done better if matched with an ingroup counterpart. These non-cronyists failed to anticipate the power of ingroup reciprocity. In short, cronyism pays, even when efficiency is lower.

Overall, we find that cronyism is profitable for proposers, even when ingroup responders are less efficient, by design, than others. This is mainly due to higher levels of trust among ingroup members, and higher levels of reciprocity when cronyism is realized. We find that both cronies and non-cronies would benefit from partnering with ingroup members when the choice is available to them.

CONCLUSIONS AND POLICY IMPLICATIONS

In this paper we present the results of a study designed to examine the factors that motivate ingroup favoritism, even when it is costly, and the impacts of such behavior on trust, reciprocity, and profits. The study uses a variation on a well-studied experimental game: the trust game. We find that individuals engage in cronyism due to beliefs about ingroup members. Furthermore, the efficiency of ingroup members is a relevant factor: subjects are less likely to partner with ingroup members when they are less efficient. In addition, more risk-tolerant individuals are more likely to partner with people outside their group.

We find that there is greater trust towards ingroup members. We also find that cronyism has a positive impact on reciprocity: first movers are rewarded when they select fellow ingroup members as partners. Taken together, these results demonstrate why cronyism exists and persists, even in the presence of costs. Becker (1971) argued that engaging in discrimination (of any variety) would reduce profits since a more efficient worker would be available with a wider search. However, this reasoning does not take into account the possibility that individual behavior also varies under the two conditions. We find that cronyism compensates for decreased efficiency through increased trust among ingroup members, and increased reciprocity by highly trusted ingroup responders. We find that when cronyism is available, partnering with ingroup members is always profitable. Hence, we find evidence for cronyism as a social dilemma: it persists because it is individually profitable, but still may be welfare reducing overall.

Our results are similar to those found by Brandts and Sola (2010), Fiedler et al. (2011), and Belot and van de Ven (2011), which show that reciprocity increases with reduced social distance. However, they are different from Currarini and Mengel (2016) who find that the ability to choose a partner reduces or eliminates ingroup favoritism. We build on these studies by identifying the motives for engaging in cronyism, and find crony behavior to be rational: subjects engage in cronyism because they believe in greater productivity by fellow group members. Cronyism is a profitable strategy. We also find that cronyism has limited impact on trust, but greater impact on reciprocity, yielding higher returns.

Our stylized representation of cronyism differs from the "real world" form of cronyism in two ways. First, the analysis we present is static, i.e. the trust game is played a single time and ends. Cronyism may have a significant long-term component with impacts on inequality and meritocracy that we do not address here. In addition, these repeated interactions may provide

further incentives for individuals to engage in inefficient behavior. Further research is needed to estimate the long run impact of engaging in such behavior. Second, this paper is divorced from any externalities resulting from the employment of low-quality workers, as would be the case in government organizations, the effect of which is (as yet) unknown.

Our results have interesting implications for policy. First, we show clear incentives for group polarization. Partnering with ingroup members pays off, even when ingroup members are relatively inefficient. Organizations that do not allow cronyism may not be availing themselves of the associated productivity enhancements. So, should we eliminate anti-cronyism rules? The answer lies in the purpose of the rule itself. If the purpose is to reduce discrimination for its own sake, then maintaining the rule is desirable. However, if the purpose is to maximize shareholder value, then the relationships between employers and workers need more careful examination.

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Appendix A: Game Screenshots

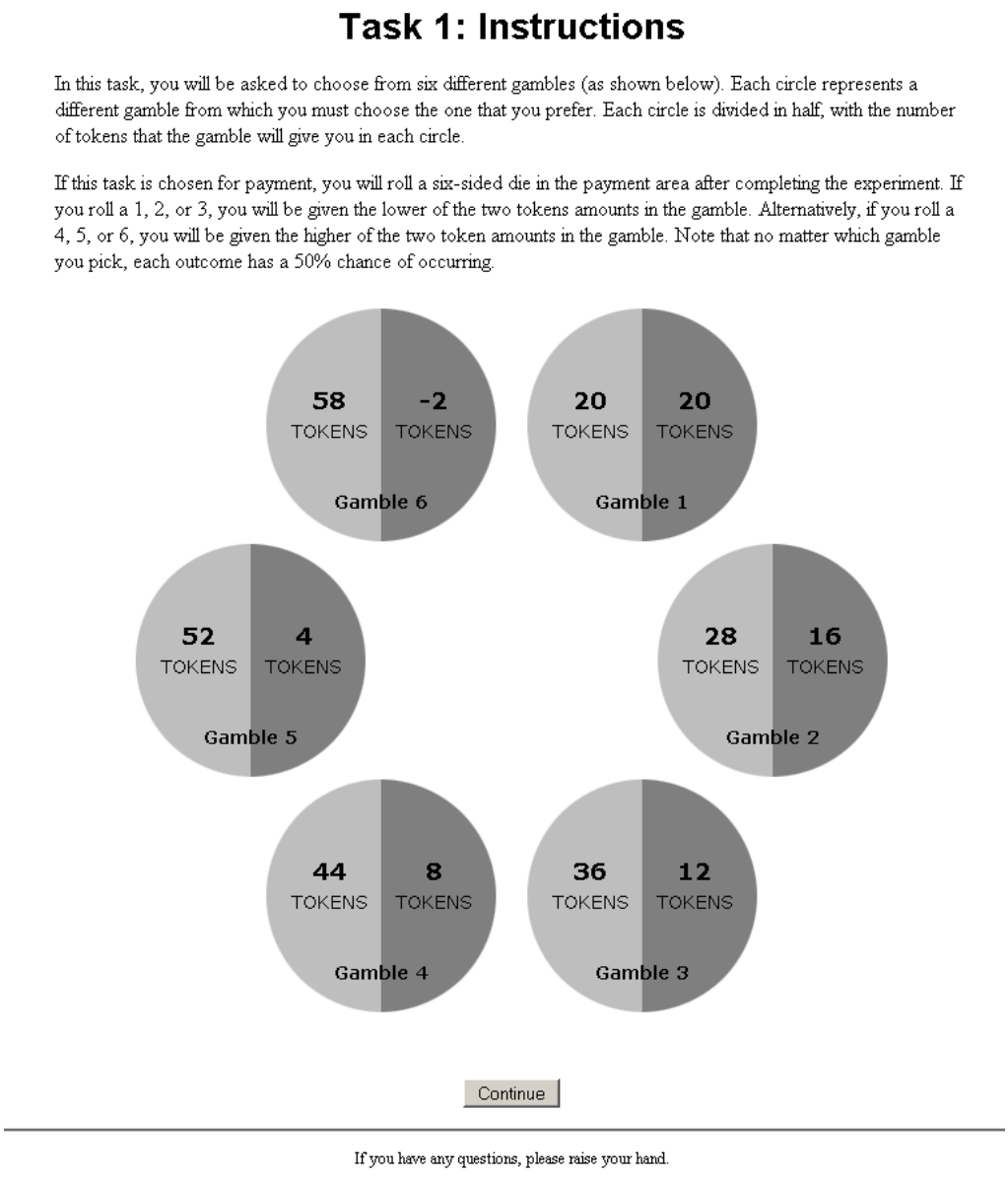


Figure A.1: Eckel-Grossman risk measure screenshot

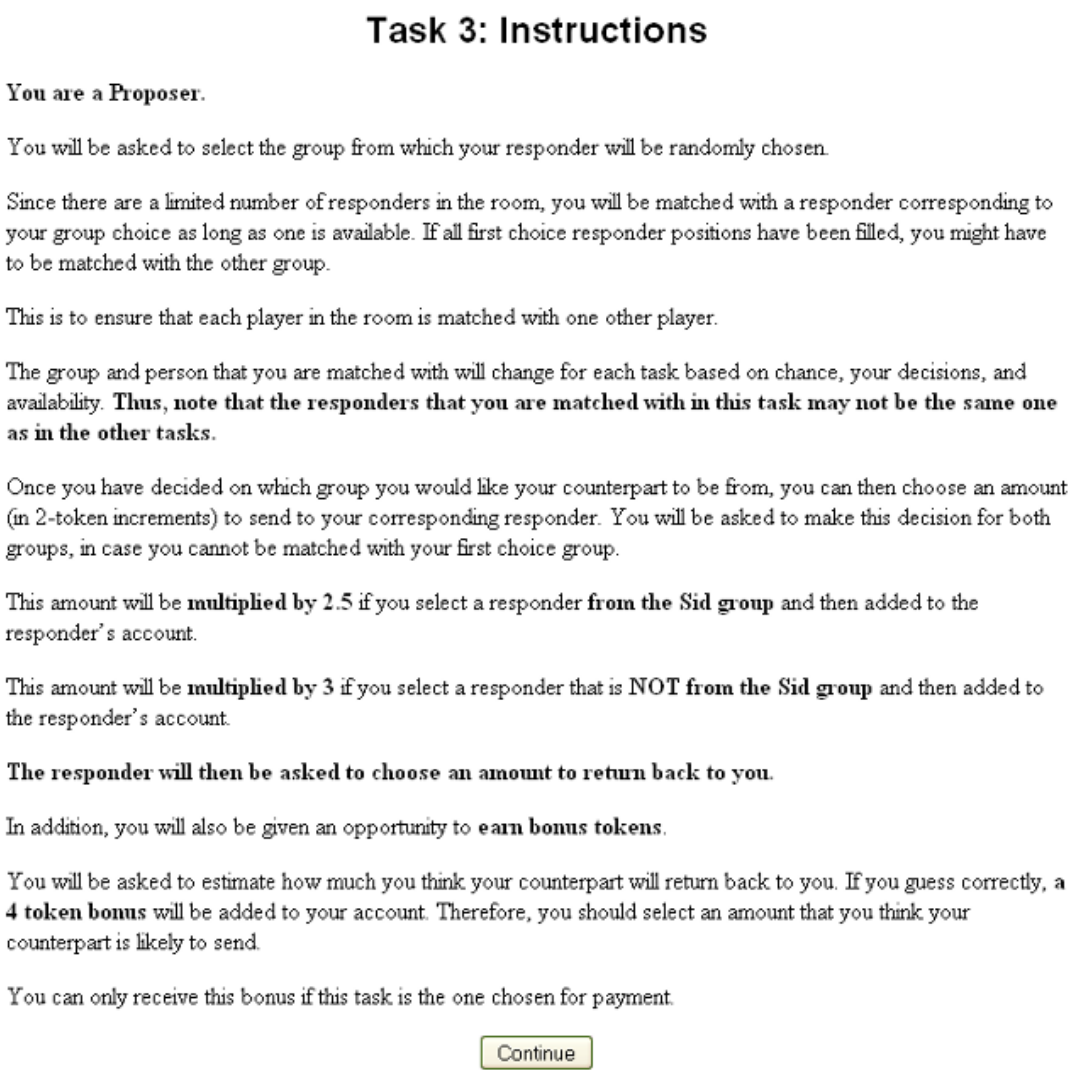
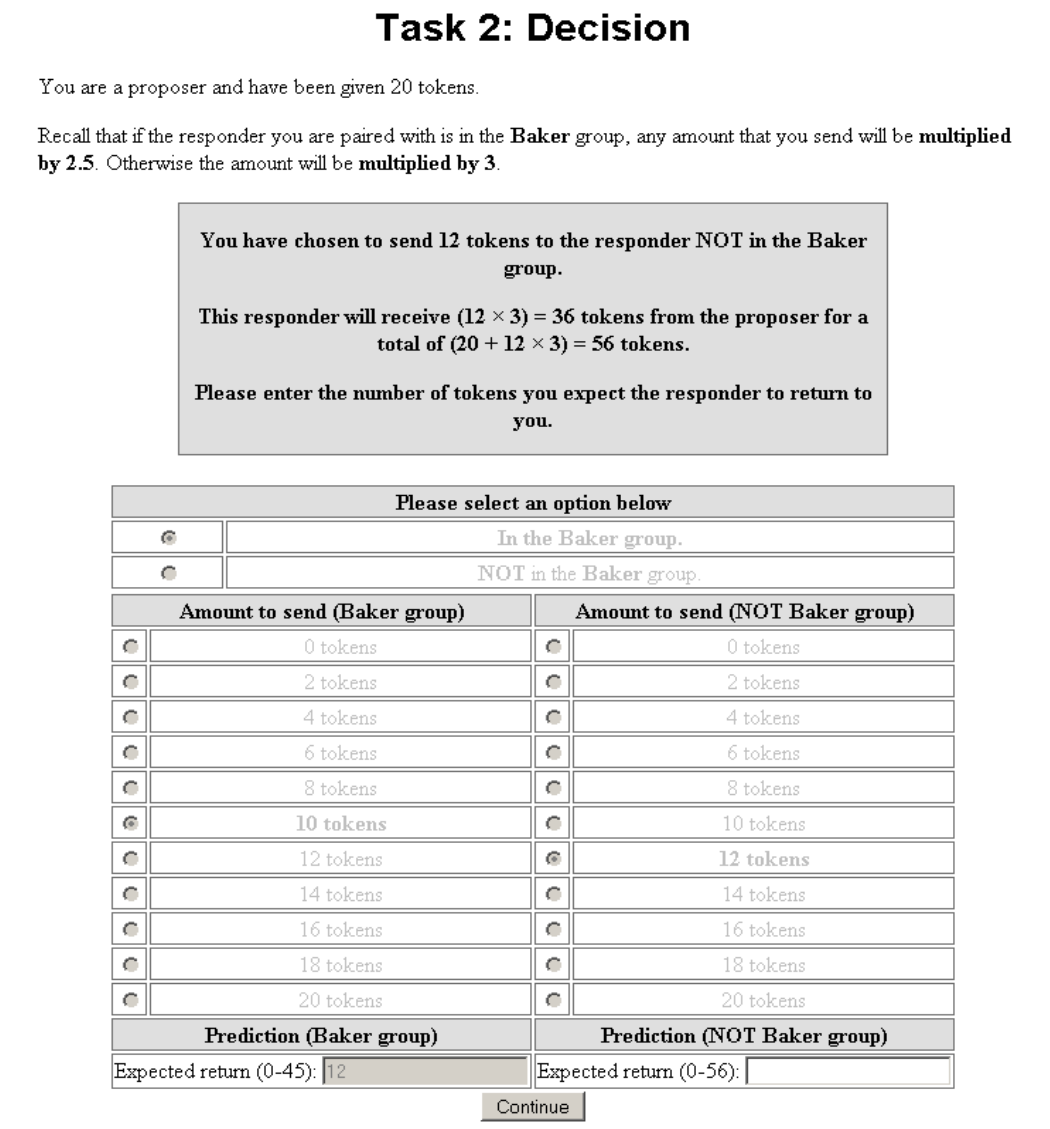


Figure A.2: Screenshot for matching instructions



Task 2: Decision

You are a proposer and have been given 20 tokens.

Recall that if the responder you are paired with is in the **Baker** group, any amount that you send will be **multiplied by 2.5**. Otherwise the amount will be **multiplied by 3**.

You have chosen to send 12 tokens to the responder NOT in the Baker group.

This responder will receive (12 × 3) = 36 tokens from the proposer for a total of (20 + 12 × 3) = 56 tokens.

Please enter the number of tokens you expect the responder to return to you.

Please select an option below	
◉	In the Baker group.
○	NOT in the Baker group.

Amount to send (Baker group)		Amount to send (NOT Baker group)	
○	0 tokens	○	0 tokens
○	2 tokens	○	2 tokens
○	4 tokens	○	4 tokens
○	6 tokens	○	6 tokens
○	8 tokens	○	8 tokens
◉	**10 tokens**	○	10 tokens
○	12 tokens	◉	**12 tokens**
○	14 tokens	○	14 tokens
○	16 tokens	○	16 tokens
○	18 tokens	○	18 tokens
○	20 tokens	○	20 tokens

Prediction (Baker group)	Prediction (NOT Baker group)
Expected return (0-45): 12	Expected return (0-56):

Continue

If you have any questions, please raise your hand.

Figure A.3: Cronyism game proposer decision screenshot

You have been given 20 tokens. In addition to this amount, the proposer will be sending you some amount of their choosing.

Any amount this proposer chooses to send will be **multiplied by 2.5** and added to your account. You must now choose how much you would like to send back to this proposer.

Please make your decision for all possible cases below.

Proposer Sends	Amount in my Account	Amount to Return	Amount to Keep
0 tokens	20 + 0 × 2.5 = **20**	0	20
2 tokens	20 + 2 × 2.5 = **25**	3	22
4 tokens	20 + 4 × 2.5 = **30**	12	18
6 tokens	20 + 6 × 2.5 = **35**	10	25
8 tokens	20 + 8 × 2.5 = **40**	14	26
10 tokens	20 + 10 × 2.5 = **45**	15	30
12 tokens	20 + 12 × 2.5 = **50**	12	38
14 tokens	20 + 14 × 2.5 = **55**	12	43
16 tokens	20 + 16 × 2.5 = **60**	26	34
18 tokens	20 + 18 × 2.5 = **65**	34	31
20 tokens	20 + 20 × 2.5 = **70**	16	54

Continue

Figure A.4: Cronyism game responder decision screenshot

Appendix B: Additional Analysis

Table B.1: Descriptive statistics of amounts sent and returned by treatment and type of counterpart. In columns 3-6 standard deviations are reported in parentheses.

		Proposer		Responder	
Treatment (n)	Group	Average Sent	Average Expected Return	Average % Return	Average Expected Sent (with multiplier)
1 (34)	In-Group	10.65 (7.64)	18.68 (14.69)	34.79 (30.46)	30.00 (21.63)
	Non-ingroup	10.06 (7.70)	16.12 (13.92)	31.28 (24.44)	19.26 (13.64)
2 (36)	In-Group	7.67 (6.30)	11.56 (11.19)	27.78 (28.31)	20.67 (17.10)
	Non-ingroup	5.44 (5.79)	9.17 (11.60)	28.12 (25.68)	25.71 (17.09)
3 (39)	In-Group	11.23 (7.00)	22.46 (16.78)	40.09 (20.43)	24.35 (18.18)
	Non-ingroup	9.28 (6.74)	18.00 (17.22)	34.60 (38.33)	27.00 (19.66)
4 (39)	In-Group	9.54 (6.33)	14.08 (12.02)	49.82 (34.21)	22.19 (13.16)
	Non-ingroup	8.82 (6.35)	14.72 (13.11)	36.01 (29.77)	22.96 (14.55)

Table B.2: Probability of selecting ingroup members in the Partner Choice condition (Coefficients)

Dependent variable: Partner choice (1 = Chose ingroup member)				
	1	2	3	4
Ingroup Efficiency	-1.296***	-0.909**	-1.059***	-1.342***
(1 = Low)	(0.325)	(0.368)	(0.382)	(0.452)
Beliefs: Expected Profit		0.149**	0.148**	0.178***
(Ingroup less other)		(0.065)	(0.067)	(0.069)
Favoritism: Dictator Game			0.252	0.291
(Ingroup less other)			(0.161)	(0.186)
Risk Preferences (1-6)				-0.321**
(6 = Risk seeking)				(0.141)
Gender (D)				0.598
(1 = Female)				(0.445)
Constant	1.135***	0.960***	0.977***	2.163***
	(0.256)	(0.273)	(0.285)	(0.760)
Observations	78	78	78	78
Pseudo R-squared	0.172	0.258	0.304	0.418
Log Likelihood	-41.65	-37.34	-35.01	-29.27

Note: ***p<.001, ** p<0.01, * p<0.05. Probit specification, standard errors in parentheses. Table reports marginal effects. Dependent variable takes on a value of 1 if subject selected ingroup member as partner in the trust game. Data is from the *Choice* partner matching treatments. See footnotes 4 and 5 for variable definitions.

Table B.3: Probability of preferring ingroup members as partner (*Random match* treatments)

Dependent variable: Partner choice (1 = Chose ingroup member)

	1	2	3	4
	v2	v3	v4	v5
Ingroup Efficiency	-1.069***	-0.902**	-1.390***	-1.425***
(1 = Low)	(0.328)	(0.352)	(0.410)	(0.418)
Beliefs: Expected Profit		0.152**	0.232**	0.233**
(Ingroup less other)		(0.064)	(0.095)	(0.096)
Favoritism: Dictator Game			0.303***	0.310***
(Ingroup less other)			(0.099)	(0.101)
Risk Preferences (1-6)				0.071
(6 = Risk seeking)				(0.118)
Gender (D)				0.067
(1 = Female)				(0.406)
Constant	0.929***	0.789***	0.755***	0.485
	(0.252)	(0.265)	(0.276)	(0.558)
Observations	70	70	70	70
Pseudo R-squared	0.121	0.221	0.347	0.351
Log Likelihood	-40.57	-35.99	-30.17	-29.99

Note: * p<0.1, **p<0.05, *** p<0.01. Probit specification, standard errors in parentheses. Table reports coefficients. Dependent variable takes on a value of 1 if subject selected ingroup member as partner in the trust game. Data is from the *Random match* treatment. The "Beliefs" variable measures the difference in beliefs about reciprocity between ingroup members and others. Thus, positive values mean subjects expect more back from their ingroup, while negative values mean subjects expect less back from their ingroup (relative to others). The "Favoritism" variable measures the difference in dictator giving to ingroup members and others. Thus, positive values are subjects giving more to ingroup relative to others, while negative values are subjects giving more to others.