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The Spillover Effects of Affirmative Action on Competitiveness and Unethical Behavior

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C70, C91, J16, J24, J31, M52

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1. Introduction

Affirmative Action policies have developed in various contexts to facilitate the access to more rewarding positions of groups of the population that suffer from lower status in society, most of the time by means of quotas. Many aim at reducing the gender gap in the access to the boards of large companies or to parliaments,[1] but examples can be found also in the context of highly segmented societies, as in India where the objective is to reduce the gap between castes in the access to higher education and jobs (*e.g.*, Deshpande, 2011).

These policies have pros and cons. On the one hand, they help fight the underrepresentation of some categories whose ability does not differ on average from that of the more represented categories (OECD, 2012), and they reduce stereotypes (Beaman *et al.*, 2009). They can also possibly improve the confidence of beneficiaries in the longer run. On the other hand, they may generate efficiency losses and resentment if they lead to more able employees being passed over for less able but more protected employees (Holzer and Neumark, 2000) or if no able person can be found (Ahern and Dittmar, 2012). Despite an emerging literature on this topic (Pande, 2003; Besley *et al*, 2004; Fryer and Loury, 2005; Duflo, 2005; Bertrand *et al.,* 2014), little is known about the causal effects of reservation policies and their spillover effects. Laboratory experiments have shown that in a setting where high-performing females shy away from competition (Niederle and Vesterlund, 2007; Datta Gupta *et al*., 2013), introducing quotas substantially increases females' competitiveness (Nierdele *et al*., 2013). The surge in the supply of high-performing individuals to the competitive pool more than outweighs the costs of the program. Balafoutas and Sutter (2012) confirm that Affirmative Action reduces the gender gap without harming male competitors. However, except in the last study showing that post-tournament cooperativeness is not affected and in Leibrandt *et al*. (2015) who, on the contrary, found a strong backlash against females when quotas are in use, we know very little

[1] See for example, http://www.bloomberg.com/news/articles/2015-07-01/can-gender-quotas-get-more-women-into-boardrooms-, and European Commission (2015).

about the spillover effects of Affirmative Action policies. This is an important question, however, since this illustrates how institutions can influence the evolution of preferences (*e.g.*, Fehr and Hoff, 2011).

Our main objective is investigating two types of spillover effects of Affirmative Action with an application to the context of castes in India, using natural group identities. First, we study whether such policies, if effective when implemented, keep having an impact on the beneficiaries once they are withdrawn. If they encourage able people who were initially shying away from competition to compete, are these people willing to compete in the same proportion when they no longer benefit from the support of the policy? Do the winners from the supported category learn from their success and revise their beliefs about their relative ability?

The second spillover effect investigated is the possible spiteful behavior by people from the category who did not benefit from Affirmative Action towards people from the other category. Indeed, if Affirmative Action is perceived by this category as unfair (for example because they fear that more able individuals from their own group are passed over in competitions by less able individuals from the other group), it may generate spite against the members of the category benefiting from the policy. Indeed, feelings of injustice have been shown to lead to sabotage (*e.g.*, Ambrose *et al*., 2002; Leibrandt *et al*., 2015). The policy may also lead some subjects to take an opportunity to cheat to compensate for the possible disadvantage introduced by Affirmative Action. On the beneficiary category's side, two opposite effects may be observed. If Affirmative Action interventions reinforce competitiveness, a feeling of entitlement may increase moral flexibility.[2] If it also reinforces group identity (*e.g.*, Akerlof and Kranton, 2000; Chen and Li, 2009), it may increase hostility against out-groups. On the other hand, the policy may weaken the initial group identity and lead the beneficiary category to feel more like people from the other category.

[2] For example, Schurr and Ritov (2016) show that winning a competition leads to more subsequent dishonest reporting in a standard die-under-cup task, probably because of a higher feeling of entitlement.

To study these spillover effects, we have designed an artefactual field experiment (Harrison and List, 2004) with castes in India. Despite the early introduction of Affirmative Action in this country, with the aim of facilitating the access of lower castes members to jobs in the public sector, there are still large caste discrepancies in the access to upper tier jobs.[3] We recruited 672 participants in 30 villages from South 24 Parganas district of West Bengal. About half of them were from the General category and the other half were from the Scheduled Castes.[4]

Our experiment consists of four treatments. The structure of the Baseline is close to that of Niederle and Vesterlund (2007). In the first part, subjects had to perform a real-effort task under an individual piece rate payment scheme. In the second part, they performed the same task under a tournament scheme in groups of six performers with two winners. After experimenting with both schemes, in the third part subjects were given the opportunity to choose the payment scheme to be applied to their performance in this part. As in the previous literature, we consider that choosing the tournament indicates the participants' competitiveness. In the fourth part, subjects chose the payment scheme to be applied to their performance in the first part, giving us an additional measure of competitiveness. Treatment 1 is similar to the Baseline, except that subjects were informed that their group consists of subjects from both castes in equal proportions. This allows us to test whether performance and competitiveness are affected by making the caste composition of the group common information. Indeed, previous studies have found that when caste identity is made public, a gap in performance favoring the high caste

[3] Largely due to the British colonial regime who made the caste system the central organization of the administration in India, jobs in public administration and senior appointments were allotted based on castes, leading to the over-representation of employees from the upper castes (*e.g.*, de Zwart, 2000). To curb this stratification and occupational endogamy, a percentage of jobs in the administration has been reserved for employees from lower castes, a policy starting already after the '20s. After independence, lists of Scheduled Castes ("*Dalit*" or Untouchables), based on heredity, have been established for caste-based job reservations. In 1989 the parliament adopted the Scheduled Castes and Scheduled Tribes Act. In the two lowest of the four categories of jobs in public administration, the share of employees from the Scheduled Castes is similar to their share in the population, but there is a high discrepancy for the two highest categories of jobs. Discrimination remains also important in the private sector (*e.g.*, Thorat and Attewell, 2010; Siddique, 2011).

[4] The Scheduled Castes represent 16.6% of the general population in India and the General category about 34% (the rest belong to Scheduled tribes, 8.6%, and Other Backward categories, 41%) (Census 2011).

emerges and learning by the low caste is impaired (Hoff and Pandey, 2006; 2014). This accords with the notions of *stereotype threat* (*i.e.*, being reminded of their low status decreases the self-confidence of the low-caste individuals and make them conform to the stereotype formed about their social group) and *stereotype boost* (*i.e.*, high-caste individuals feel encouraged because they are reminded of their high status) (Steele and Aronson, 1995; Shi *et al.*, 2011).

Treatments 2 and 3 introduce Affirmative Action: in parts 2 to 4 of treatment 2, a quota imposes that one of the two winners in the tournament is the best performer of the Scheduled Caste. In treatment 3, a preferential treatment increases the score of the Scheduled Caste subjects in the tournament by a fixed amount. To measure the spillover effect of Affirmative Action on future competitiveness, part 4 includes two successive choices between submitting performance in part 1 to either a piece rate or a tournament, the first one in the presence of the quota or the preferential treatment and the second one without these policies. The spillover is identified through the evolution of beliefs about one's performance rank and the comparison between the choice of the tournament in the two decisions.

To measure the spillover of Affirmative Action on spite and ethical behavior, in all treatments we added a fifth part in which subjects could earn additional money by rolling a die under-the-cup (Fischbacher and Föllmi-Heusi, 2013, and Shalvi *et al.*, 2011). Earnings were proportional to the reported side of the die that faced up. By misreporting the random outcome, subjects could increase their payoff at no risk of detection. An originality of our design is that we introduced either positive or negative externalities.[5] Indeed, the subjects' reports determined both their earnings and that of another subject. We manipulated within-subjects whether the matched partner was from own or the other caste. We manipulated between-subjects whether the interests of the two players were or not aligned, allowing for respectively, Pareto-white lies

[5] We also differ from Leibrandt *et al.* (2015) because in their experiment subjects could misreport others' performance. Here, subjects can misreport a random outcome with no interference with another player's action.

or selfish black lies.[6,7] We test whether people are more (less) willing to lie to benefit themselves and an in-group (an out-group) when payoffs are aligned, and whether they are less (more) willing to lie to avoid harming an in-group (to harm an out-group) when payoffs are unaligned. The comparison of reports between treatment 1 and treatments 2 and 3 indicates whether introducing Affirmative Action in previous parts affects a possible out-group bias.

Our main findings show that without Affirmative Action, the revelation of castes does not affect performance but it generates a significant caste gap in both absolute and relative self-confidence. Directionally, it increases the competitiveness of the General category subjects and decreases that of the Scheduled Castes subjects but the caste gap in competitiveness is not significant. The introduction of Affirmative Action slightly increases the perceived chance of the Scheduled Castes subjects of being the winner. It discourages the entry of General category subjects and encourages that of the Scheduled Castes subjects. As a result, the caste gap in competitiveness becomes significant to the advantage of the Scheduled Caste subjects.

Regarding the first spillover, we find that as soon as Affirmative Action is removed, the percentage of the Scheduled Castes subjects entering the tournament decreases sharply while that of the General category subjects increases. As a result, the caste gap in competitiveness that had previously opened in favor of the Scheduled Castes subjects is closed or even reversed. If the objective is to change self-confidence and create a habit of competing, these policies need to probably be in place more durably. To measure the second spillover we estimate the mean

[6] By analyzing how group identity influences lying, we also make a contribution to this literature because so far, the role of group identity in lying has been little explored. Studying the contagion of dishonesty among peers, both Gino et al. (2009) and Dimant (2016) have shown that contagion is more likely among in-groups than when social identification with peers is lower. Focusing on individual behavior in a game in which the die roller receives a fixed payoff, Jiang (2015) found that people with a strong in-group bias do not cheat more to benefit an in-group than another subject. Cadsby *et al*. (2016) show evidence of dishonesty to benefit oneself and in-groups against out-groups, but they have no condition in which reporting determines the payoff of both the die roller and an in-group. Hruschka *et al.* (2014) compare a condition in which the die roller can benefit an in-group or an out-group, and a condition in which the self is opposed to an out-group, showing that in societies with stronger institutions, people are more likely to follow an impartial rule instead of favoring in-groups or themselves. In contrast, our active player is always matched either with an out-group or an in-group and payoffs are aligned or not, which offers a more complete picture.

[7] On the terminology of white *vs*. black lies, see *e.g*., Erat and Gneezy (2012).

lying rate when matched with out-groups *vs*. in-groups, conditional on whether payoffs are aligned or not. The General category subjects express a strong bias against the Scheduled Castes members.[8] The previous implementation of Affirmative Action tends to increase it slightly, but not significantly so. Overall, the spillover effects of Affirmative Action are limited: they do not generate the bias against the protected caste but they do not help reducing it either.

The remainder of this paper is as follows. Section 2 develops the experimental design and procedures. Section 3 presents our findings. Section 4 discusses these results and concludes.

2. Experimental design, procedures and predictions

We first present our experimental design, then our procedures. Finally, we develop our behavioral predictions.

2.1. Experimental design

The experimental design comprises of four treatments that vary information about the caste composition of the group and the rules for determining the winners in a tournament. Each treatment has multiple parts. One part is randomly selected for payment to prevent hedging. In each of the first three parts of each treatment, subjects are asked to perform a real-effort task. We first describe the task, then the Baseline treatment and finally, each of the other treatments.

The task

The task consists of a memory test. Indeed, stereotype threat has been shown to reduce working memory, in particular the phonological (sound of language) loop (Beilock *et al*., 2007). Recalling a series of numbers that are dictated is a suitable test of stereotype threat. 15 randomly selected numbers between 0 and 100 are called out, one at a time. The subject has to recall and write down as many numbers as possible in the allotted 3 minutes *after* all the numbers have

[8] This is consistent with Piff *et al*. (2012) who found that high status in society predicts higher unethical behavior, and with Fehr *et al*. (2008) who show that spitefulness is more prevalent among people belonging to high castes in India than among those from low castes (see also Hoff *et al*., 2011).

been called out. The score is given by the number of correctly recalled numbers. No feedback is provided on absolute or relative performance in any part before the end of the session.

Baseline treatment

The sequence of the Baseline treatment (T0, henceforth) is quite similar to that of Niederle and Vesterlund (2007). Subjects are informed that they are part of a group of six that remains fixed throughout most parts of the experiment, but they are not informed about the caste composition of this group. In fact, each session comprises of 12 subjects with six from the Scheduled Castes (SC, hereafter) and six from General category (GC, hereafter). In each group, there are three SC and three GC subjects. The content of parts and the compensation schemes are as follows.

Part 1 – Piece Rate: Payoff depends exclusively on the individual absolute performance. Subjects are paid INR 10 for every correctly recalled number in the allotted three minutes (minimum payoff =INR 0, maximum=INR 150).[9]

Part 2 – Tournament: The top two performers in each group of six players are declared "winners". Each winner is paid a piece rate of INR 30 for every correctly recalled number. The non-winners are not paid anything. In case of a tie, the winners are chosen randomly.

Part 3 - Choice of compensation scheme for future performance: Before participating again in the memory game, subjects have to choose whether they want to be paid by piece rate or tournament. Part 3 tournament winners are decided by comparing the score of competitors in part 3 relative to the part 2 score of the group members (to avoid the effect of self-selection that occurs in part 3). Presenting subjects both compensation schemes in the first two parts before letting them choose allows them to experience first-hand what the otherwise abstract compensation schemes mean. It also helps us map performance metric to choice of competition.

Part 4 - Choice of compensation scheme for past performance: Contrary to the previous parts, subjects do not perform the memory test henceforth but are asked to choose the compensation

[9] 100 Indian Rupee = 1.5 U.S. Dollar. They correspond to 5.6 U.S. Dollars in 2015 Purchasing Power Parity.

scheme they want to be applied to their performance in part 1. Part 4 helps us disentangle whether observed effects arise because of taste for competition or from instrumental value of competition (*i.e.*, possibly higher monetary reward) since here subjects do not perform the task.

Part 5 – Die Roll: This task is inspired by the die-under-the-cup task of Fischbacher and Föllmi-Heusi (2013) and Shalvi *et al*. (2011). Each subject has to roll two dice successively, one red and one blue, and report the outcomes. Each outcome can potentially determine an additional payoff for themselves and for another participant in the session. Each die is put in a cup closed with a lid. A hole in the lid allows only the subject see the outcome of a die roll, which should remove any possible feeling of scrutiny by anyone. Before each report, subjects are instructed to roll the die twice (to check that the die is fair) but only report the first outcome. A random draw at the end of the session determines which decision in each pair counts for payment.

For part 5, we use two conditions across sessions. Condition 5A allows for black lies. Indeed, the payoffs of the subject who rolls the die and his matched partner are unaligned, as indicated in Table 1: the roller cannot increase his payoff by lying without reducing the payoff of his partner. In contrast, condition 5B allows for Pareto-improving lies. Here, payoffs are aligned: the payoffs of both players increase with the number reported. In the two conditions the subject always earns more the higher the number he reports, which gives him an incentive to inflate the reported number. However, social preferences may affect behavior, as a subject who misreports helps or harms another player, depending on the condition. Thus, these conditions indicate the sensitivity of lying to the consequence of a lie on others. If the task does not allow us to identify cheating at the individual level, we can measure it at the caste level.

Table 1. Payoffs in the die task in part 5 (in Indian Rupees)[10]

Outcome reported	1	2	3	4	5	6
Condition 5A -Unaligned payoffs						
Payoff of the roller in INR	10	20	30	40	50	60
Payoff of the other in INR	60	50	40	30	20	10

[10] Note that in contrast to Fischbacher and Föllmi-Heusi (2013), rolling a 6 pays the highest amount and not 0. This was done to avoid possible confusion among the subjects.

Condition 5B - Aligned payoffs						
Payoff of the roller in INR	10	20	30	40	50	60
Payoff of the other in INR	10	20	30	40	50	60

Part 6 – Risk Elicitation: In this final part, we use a risk elicitation task inspired from Gneezy and Potters (1997). Subjects can invest any amount of a given endowment of INR 100 in a risky project. With 50% chance the amount invested is trebled and with 50% chance it is lost. The final payoff is therefore the initial endowment minus the invested amount, plus the return of the investment. Invested amounts others than the total endowment indicate risk aversion.

Other treatments

Treatment 1 – This treatment replicates the Baseline treatment, except that the caste composition of the group is made common information from the very beginning, while preserving the players' anonymity. Moreover, in part 5, each subject is informed that if this part is selected for payment, his report using the blue die determines both his payoff and that of another player from his own caste, while the report using the red die determines his payoff and that of another player from the other caste. This allows us to investigate whether behavior is conditional on the caste identity of the matched player, while the aligned and unaligned payoff structures are expected to capture the tension between caste identity and payoffs. Indeed, the decision to misreport may now depend on the willingness to help or harm an in-group (blue die roll) or an out-group (red die roll).

Similar to treatment 1, in treatments 2 and 3 the caste composition of the groups is made common information. But now, Affirmative Action (AA, hereafter) is introduced.

Treatment 2 - A quota based AA is introduced in parts 2, 3 and 4A. In quota tournament, each group produces two winners but one of the two is necessarily the best performer from the Scheduled Castes category and the other one is the top performing subject among the remaining five. In part 4B, the quota intervention is withdrawn and the choice is between piece rate and the regular tournament.

Treatment 3 - Here, we introduce a Preferential Treatment (PT) based AA in parts 2, 3 and 4A. In PT tournament, a SC subject is awarded 2 bonus points and her final score is her actual score +2. A GC subject is not awarded any bonus point and thus, her final score is her actual score. Those with the top two final scores are the two winners in PT tournament. In part 4B, the intervention is withdrawn.

In treatments 2 and 3, the withdrawal of the AA policy in part 4B aims to elicit spillover effects of these policies on self-confidence and competitiveness. In part 5 we can observe whether the reporting of the die outcomes is affected by the previous implementation of AA.

Table 2 summarizes the main characteristics of our experimental design.

Table 2. Summary of the experimental design

	Baseline (No info on caste composition of group)	*Treatment 1* (Info on caste composition of group)	*Treatment 2* (Quota based tournament)	*Treatment 3* (Preferential Treatment based tournament)
Part 1	Piece rate	Piece rate	Piece rate	Piece rate
Part 2	Tournament	Tournament	Quota tournament	PT tournament
Part 3	Choice: Piece rate *vs*. Tournament	Choice: Piece rate *vs*. Tournament	Choice: Piece rate *vs*. Quota tournament	Choice: Piece rate *vs*. PT tournament
Part 4*	Choice: Piece rate *vs*. Tournament for part 1 score	Choice: Piece rate *vs*. Tournament for part 1 score	Choice: Piece rate *vs*. Quota tournament for part 1 score	Choice: Piece rate *vs*. PT tournament for part 1 score
Part 4B			Choice: Piece rate *vs*. Tournament for part 1 score	Choice: Piece rate *vs*. Tournament for part 1 score
Part 5	Dice roll	Dice roll	Dice roll	Dice roll
Condition 5A	Aligned payoffs	Aligned payoffs	Aligned payoffs	Aligned payoffs
Condition 5B	Unaligned payoffs	Unaligned payoffs	Unaligned payoffs	Unaligned payoffs
Part 6	Risk elicitation	Risk elicitation	Risk elicitation	Risk elicitation

***Note*: * Part 4 denotes part 4A in treatment 2 and 3.**

Belief elicitation

At the end of each part, subjects are asked to report their beliefs about their absolute and their relative performance. Absolute self-confidence is captured using the question: "How many numbers do you think you have correctly written down?". Relative self-confidence (or self-

placement) is captured using two questions: "Between 1 and 6, which rank do you think you have got, compared to the five other group members?" and "What is the chance, in percent, that you will be among the winners of your group?". In treatment 2 subjects also report their perceived rank within their caste. In treatment 3 they have to indicate their perceived rank based on the final score (including the 2 points bonus given to the SC subjects).

A small incentive encouraged subjects to report their beliefs truthfully without introducing hedging problems. The incentivizing procedure has been kept as simple as possible to make them comprehensible to the subject pool.[11] Since subjects received no feedback in any part and treatment about their score or the score of others, eliciting beliefs gives us rich data on the evolution of self-confidence across parts (in particular before, during, and after the AA interventions) and helps us map self-confidence to competitive attitudes.

2.2.Experimental procedures

We recruited subjects from South 24 Parganas district of West Bengal. One third of the total number of blocks in the district were randomly chosen. A stratified sample of 3% of village/ward was chosen from each block[12] The maps of the sampled blocks and the villages/wards are given in Appendix 2. From each sampled unit 12 to 24 subjects were recruited using convenience sampling. Local intelligence helped us strike a balance between the number of GC and SC subjects. In total, we had 30 villages and 672 subjects in our study. This includes 341 GC, 318 SC and 13 subjects from other castes (Other Backward Caste or Schedule Tribes) that we pool with the SC subjects in the data analysis.

Brief descriptive statistics of the subject pool across the four treatments are reported in Table A1 in Appendix 3. The subject composition is balanced across treatments. 44-48% are females. About 48-52% belong to the SC category. Subjects are willing to invest between INR 39-42 in the risk elicitation game, which denotes a relatively high degree of risk aversion. Mean

[11] See instructions in Appendix 1.
[12] The census data which was used for sampling purposes identifies at the village or ward-of-a-town level.

age is 20.4-21.9 years. Two-tailed non-parametric tests indicate that no pairwise treatment comparison is significant (p>0.10).

Each session comprised of 12 subjects and was randomly assigned to one of the four treatments and one of the two part 5 conditions. Upon arrival, subjects were randomly assigned to a desk in public facilities (schools, open spaces, …) where they received a set of instructions and two cups with the blue and red dice. Instructions for the next part were distributed after completion of the previous part. All questions were answered in private. Appendix 4 displays pictures of some sessions. Each session lasted between 75 and 90 minutes. Subjects were given a show up fee of INR 100. Earnings from the game ranged from INR 100 to INR 550 with an average of INR 287 (~$16 in 2015 PPP terms).

2.3. Behavioral conjectures

We now present four main behavioral conjectures.

Our first conjecture is that SC subjects may suffer from a stereotype threat when their group identity is made common information, compared to a setting where castes are kept silent. This stereotype threat has already been identified in the literature, especially in highly segmented societies. We expect to observe it through a lower mean score in the memory task and a lower confidence in absolute and relative performance levels for the SC subjects when caste is made salient compared to when it is not. We can also test for the stereotype boost in the GC subjects.

Our second conjecture is that AA interventions boost the self-confidence of the subjects who are eligible to the policy and increase their competitiveness. Indeed, the prospect of benefiting from a quota or from a score bonus when choosing the tournament should counteract the effect of the stereotype threat, if any. This has been observed in studies where the same types of intervention increased the competitiveness of the most able females and reduced the gender gap in competitiveness (Niederle and Vesterlund, 2007; Balafoutas and Sutter, 2012).

Our third conjecture is that the subjects from the category that previously benefited from AA increase on average their confidence about their chance to win a tournament and hence, they stay more competitive even after the AA interventions have been withdrawn. We expect that having experienced the tournament payment scheme with the support of AA policies should help subjects from the protected caste to revise upwards their beliefs about their ability to win a competition. If so, this should encourage them to compete more after than before the introduction of these measures.

Our last conjecture is that the subjects from the category that did not previously benefit from AA interventions increase their bias against the subjects from the other caste, compared to a setting without AA, and they may forego benefits from misreporting the die outcome when lying also increases the payoff of a partner from the other caste. Based on the literature on dishonesty (Fischbacher and Föllmi-Heusi, 2013; Abeler *et al*., 2016), we expect that not all subjects lie and not in full. If lying is conditional on the institutional environment, some subjects who did not benefit from the AA advantage and find this unfair may refrain from lying (lie more, respectively) when such a lie would increase (decrease) the payoff of an out-group.

3. Results

First, we present our results on the existence of a stereotype threat/boost, on the willingness of subjects from different castes to compete, and on the impact of AA on the decision to enter the tournament across castes. Next, we study the spillover effects of AA on confidence and competitiveness once the intervention is removed. Finally, we focus on the spillover effects of AA on unethical behavior and on the in-group/out-group bias.

3.1. Stereotype threat, competitiveness, and the impact of AA

Our first result can be stated as follows.

Result 1. Caste-related stereotype threat and boost work via beliefs, not via performance. This is consistent with our first conjecture.

Support for Result 1. We first test whether our two groups perform differently when caste is made common information. We compare the memory score difference in part 2 (when tournament is compulsory) between T1 and T0, for GC and SC subjects. This is the appropriate test since the other treatments confound caste revelation with the degree of competition and AA, hence the existence of pure stereotype threat cannot be cleanly inferred.[13] The mean score of the GC subjects is 8.51 in T0 and 8.69 in T1 (*t*-test, clustered p=0.74). For the SC subjects, the mean score is 8.70 in T0 and 8.33 in T1 (*t*-test, clustered p=0.37). The caste performance gap in T0 is not significant and for neither group does performance change significantly from T0 to T1, although GC subjects increase their performance while the SC subjects lowers theirs.

Although no performance gap appears when caste is announced, do high and low-caste groups form different beliefs about their ability in this context? To test this, Table 3 compares the *absolute* self-confidence prediction error between GC and SC subjects in both parts 2 and 3 (regardless of the subjects' choice).[14] It shows that both groups are over-confident. However, a significant caste gap in absolute self-confidence appears between T0 and T1 in part 2. This is due to GC subjects increasing their prediction and SC subjects lowering theirs. In part 3, these differences are no longer significant. A visual representation of the distribution of absolute self-confidence by treatment, caste, and part can be found in Figure 2A in Appendix 5.

Table 3. Performance and absolute self-confidence

Treatment	T0		T1		T2		T3	
Caste	GC	SC	GC	SC	GC	SC	GC	SC
Memory score								
- Sum of all three parts	24.16	24	24.31	23.13	24.85	24.59	24.17	23.73
- Diff. T*i*-T0			0.15	-0.87	0.69	0.59	0.01	-0.27
- Diff. GC-SC	0.16		1.18		0.26		0.44	
Absolute self-confidence in part 2								
- Mean prediction error	1.14	1.22	1.78	0.90	1.37	1.31	1.33	1.30
- Diff. T*i*-T0			0.64**	-0.32	0.23	0.09	0.19	0.08
- Diff. GC-SC	-0.08		0.88**		0.06		0.03	
Absolute self-confidence in part 3								
- Mean prediction error	1.47	1.54	1.63	1.36	1.70	1.73	1.52	1.94

[13] However, no significant differences are found in performance in any of the other treatments either. We find no difference between castes either when considering scores in part 1 instead of part 2 (t-test, p=0.40, as shown in Figure 1-A in Appendix 5 (top right panel). Figure 1-A reveals no difference in score in part 1 across treatments.
[14] We do not consider part 4 because in this part subjects do not perform the task.

- Diff. T*i*-T0		0.16	-0.18	0.23	0.19	0.05	0.40
- Diff. GC-SC	-0.07	0.27		-0.03		-0.42	

Notes: The self-confidence measure reported in part 3 represents treatment averages of all subjects, i.*e*. those who chose tournament and those who did not. Within each variable, the top row represents the mean prediction error (*i.e*., the mean difference between the subjects' actual score and their belief); the middle row presents the mean differences between treatment T*i* and treatment T0, with *i*=1,2,3; and bottom row presents the mean difference between General category (GC) and Scheduled Castes (SC) subjects. A *t*-test is used to test statistical significance for difference and standard errors are clustered at the village level. ** indicates significance at the 0.05 level.

Table 4 presents two measures of *relative* self-confidence: the proportion who think they will be winners in the tournament and the reported percent chance of being winners. Here too, the reported self-confidence measures are treatment averages of all subjects, *i.e*. of those who chose tournament and those who did not. Comparing T0 and T1 in part 2, we see that making the caste composition of the group common information significantly increases the relative confidence of the high-caste subjects and lowers that of the low-caste subjects, both in terms of the proportion who think they will be winners, and in terms of their percent chance of being winners ($p<0.05$; see also Figure 3A in Appendix 5). The caste gap in the proportion who think they will be winners increases by 19 percentage points from 2 to 21, and the caste gap in the perceived chance of winning increases from 2.64% to 10.5%.

Since stereotype threat and boost could also affect the desire to compete with members of the other caste, we compare the proportion of GC and SC subjects who choose the tournament in part 3 in T0 and T1. Figure 1 displays the proportion who choose the tournament in various parts. For part 3, the top left panel shows that while the proportion of GC subjects who compete is higher (from 0.20 in T0 to 0.25 in T1) the proportion of SC subjects lowers (from 0.19 in T0 to 0.15 in T1) when caste is common information, but the difference is not significant ($p>0.10$).

Table 4. Relative self-confidence, by treatment and caste

Treatment	T0		T1		T2		T3	
Caste	GC	SC	GC	SC	GC	SC	GC	SC
Belief being a winner–part 2								
- Mean	0.34	0.32	0.48	0.27	0.41	0.46	0.36	0.46
- Diff. T*i*-T0			0.14	-0.05	0.07	0.14**	0.02	0.14**
- Diff. GC-SC	0.02		0.21**		-0.05		-0.10	
Belief being a winner–part 3								
- Mean	0.22	0.20	0.22	0.16	0.27	0.42	0.25	0.41
- Diff. T*i*-T0			0.00	-0.04	0.05	0.22**	0.03	0.21**
- Diff. GC-SC	0.02		0.06		-0.15*		-0.16*	
Belief being a winner–part 4††								
- Mean prediction error	0.30	0.25	0.29	0.20	0.38	0.47	0.27	0.45
- Diff. T*i*-T0			-0.01	-0.05	0.08	0.21**	-0.03	0.19**
- Diff. GC-SC	0.05		0.09		-0.09		-0.18**	
Belief being a winner–part 4B								
- Mean	0.30	0.25	0.29	0.20	0.42	0.31	0.40	0.26
- Diff. T*i*-T0			-0.01	-0.05	0.12*	0.05	0.10	0.01
- Diff. GC-SC	0.05		0.09		0.11†		0.14*	
Belief on chance of winning in part 2								
- Mean	57.90	55.34	61.50	51.08	57.48	61.93	56.6	63.8
- Diff. T*i*-T0			3.60	-4.26	-0.42	6.63*	-1.71	8.04**
- Diff. GC-SC	2.64		10.50**		-4.50		-7.20*	
Belief on chance of winning in part 3								
- Mean	49.45	49.16	49.38	43.83	53.02	58.42	49.46	60.59
- Diff. T*i*-T0			-0.07	-5.33†	3.57	9.26**	0.01	11.43**
- Diff. GC-SC	0.29		5.55		-5.40†		-11.13**	
Belief on chance of winning in part 4††								
- Mean	51.87	53.67	54.00	48.28	51.30	61.21	51.74	61.01
- Diff. T*i*-T0			2.13	-5.39	-0.57	7.54*	-0.13	7.34**
- Diff. GC-SC	-1.80		5.72†		-9.91*		-9.27*	
Belief on chance of winning in part 4B								
- Mean	51.87	53.67	54.00	48.28	56.07	54.58	55.08	50.24
- Diff. T*i*-T0			2.13	-5.39	4.20	0.91	3.21	-3.43
- Diff. GC-SC	-1.80		5.72†		1.49		4.84	

Notes: ††: in treatments T2 and T3, part 4 refers to part 4A. T0 and T1 do not have two different parts A and B for part 4. Hence, the same numbers are reported for part 4 and part 4B. Prediction on rank is the proportion of subjects who think they will be winners in the tournament; prediction on chance is the reported percent chance of being winners. The self-confidence measures reported in parts 3 and 4 represent treatment averages of all subjects, i.*e*. those who chose tournament and those who did not. Within each variable, the top row represents mean values; the middle row presents the mean differences between treatment T*i* and treatment T0, with *i*=1,2,3; and bottom row presents the mean difference between General category (GC) and Scheduled Castes (SC) subjects. A *t*-test is used to test statistical significance for difference, and standard errors are clustered at the village level. **, *, and † indicate significance at the 0.05, 0.10, and 0.13 level, respectively.

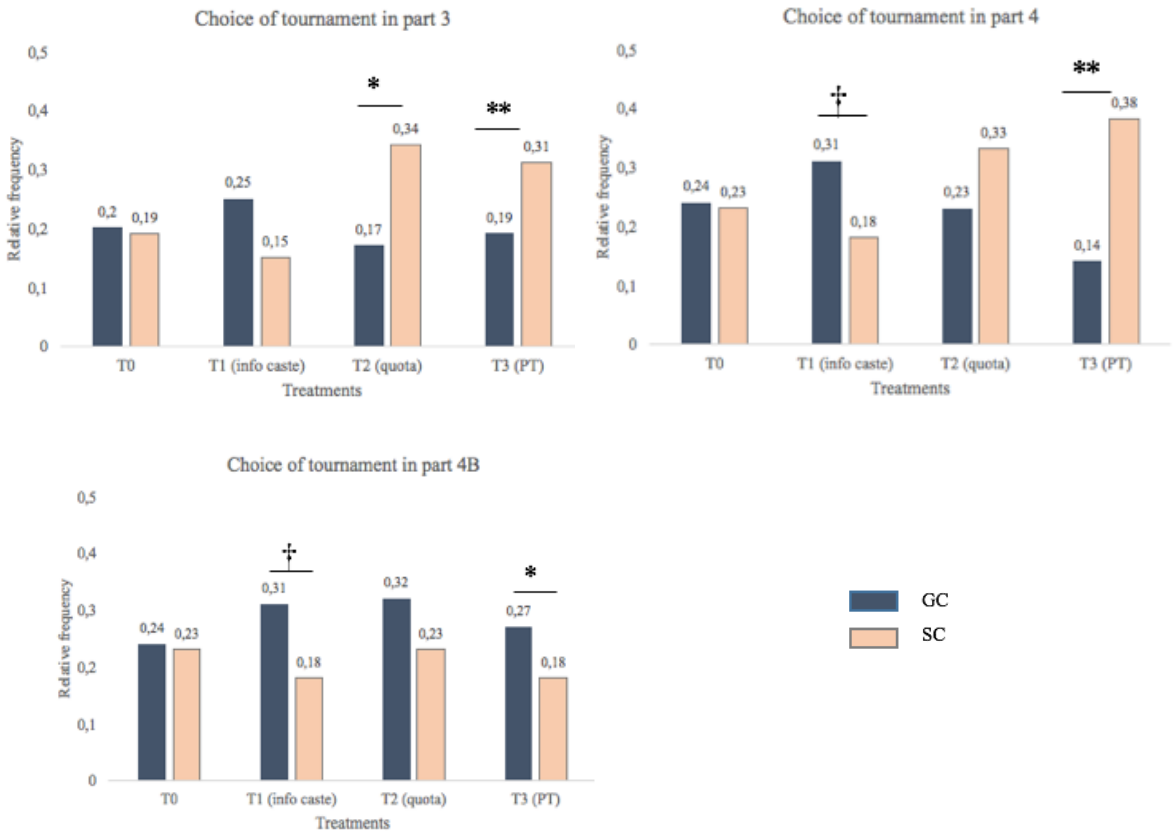

Figure 1. Proportion of subjects competing in the various parts, by caste and treatment
Note: **, *, and † indicate significance at the 0.05, 0.10 and 0.13 level, respectively.

Turning next to the direct impact of AA, our second result can be stated as follows.

Result 2. Quotas and preferential treatment boost the relative confidence of the SC subjects, motivating them to compete more than the GC subjects. This supports our second conjecture.

Support for Result 2. Before considering the caste gap in self-confidence, we compare the mean memory scores in all parts when AA is introduced in T2 and T3 with scores in T0 in the absence of AA. Table 3 shows that quotas improve scores in T2, but for both GC and SC subjects. The preferential treatment in T3 actually reduces SC subjects' score and has no effect on GC subjects' score, and again, the caste gap is not significant. In contrast, the difference in prediction errors (absolute self-confidence) between castes that was significant for part 2 in T1 is no longer significant when AA is introduced. Looking at the part 3 prediction errors in Table 3 (see also the third panel in Figure 2A in Appendix 5), we find that in neither the quota nor the

preferential treatment case is the absolute prediction error significantly different between GC and SC subjects (*t*-test clustered, $p>0.10$).

In relative terms, Table 4 shows that introducing quotas or preferential treatment significantly increases the proportion of the SC subjects who think they will be winners in part 2 (by 14 percentage points) and in part 3 (by 22 and 21 percentage points, respectively) compared to T0 (see also the third panel in Figure 3A in Appendix 5). The caste gap is not significant in part 2 but it is 15 and 16 percentage points, respectively, in favor of SC subjects in part 3 ($p<0.10$) (regardless of the payment scheme chosen). Introducing AA significantly increases the SC subjects' perceived chance of winning in T2 and T3 in both parts 2 and 3. The caste gap again is in favor of SC subjects by 4 and 7 percentage points in part 2 and by 5 and 11 percentage points in part 3 –only significant in T3.

As a result, Figure 1 shows that introducing quotas induces more SC individuals to enter the tournament in part 3 compared to T0 (the proportion is 0.34 instead of 0.19, $p=0.06$), while the proportion of GC subjects remains stable (0.17 *vs*. 0.20 in T0, $p=0.76$). The preferential treatment also increases the entry rate of SC subjects to 0.31, but not significantly so ($p=0.13$); the rate for GC subjects is stable at 0.19 ($p=0.82$). Therefore, the entry rate of the SC subjects now exceeds significantly that of GC subjects: the caste gap is 17 percentage points in T2 ($p=0.08$) and 12 points in T3 ($p=0.02$) in favor of the SC subjects. The *p*-values correspond to *t*-tests where standard errors are clustered at the village level. The above results hold for non-parametric rank-sum tests.

To better understand how the changes in self-confidence induced by AA provision can in turn affect competitive behavior, we conduct an econometric analysis of the tournament choice in part 3. Table 5 reports marginal effects in a two-step estimation procedure because beliefs on being a winner and beliefs about the chance of winning the tournament (that may determine the decision to compete) are endogenous to the tournament choice. Indeed, using a Durbin–

Wu–Hausman test leads us to reject the null hypothesis that both beliefs are exogenous ($p<0.01$ for both). Thus, in the first step we endogenize beliefs and in the second step we explain tournament choice by the predicted value of beliefs, as measured in the first step.

In the first step (bottom part of Table 5), we estimate a linear probability model with robust standard errors clustered at the village level. The dependent variable is the belief of being a winner in part 3 tournament in columns (1) and (2), and the belief on the percent chance of winning in columns (3) and (4). In columns (1) and (3), the independent variables include belonging or not to the SC category, treatment dummies (with T0 as the reference category), interaction terms between belonging to SC and each treatment, and the subject's score in part 2 when tournament was compulsory.[15] In addition, in columns (3) and (4) we control for socio-demographic characteristics (risk aversion, gender, age, education, and log household income).

We see that caste and treatments in themselves are not significantly related to beliefs. However, in all columns, the AA treatment dummies (T2 and T3) interacted with caste (SC) are significant predictors of beliefs at either the 1% or 5% level. Interestingly, effects sizes are approximately the same in either case, although the impact of T3 is slightly stronger on the percent chance of being a winner. SC in AA treatments are about 20 percentage points more likely to believe that they will be winners and believe they have between 8-13% greater chance of winning. The identifying assumption is that being SC and subject to AA treatments affect residual competition only indirectly via beliefs on being a winner/chance of winning and not directly. Therefore, in the second step the predicted values of beliefs in part 3 are entered as regressors in the binary tournament choice model that we estimate using a probit model, again with robust standard errors clustered at the village level. In column (1) the only independent variable is the predicted value of beliefs of being a winner, and in column (3) the predicted

[15] Although subjects do not receive any feedback on their score in part 2, they can form a belief about their performance by counting their number of recalls.

value of beliefs on the chance of winning. In columns (2) and (4), we control for the same socio-demographic characteristics as in the first step.

Table 5 shows that the predicted values of beliefs are strong and significant determinants of tournament choice in part 3. Both types of AA policies increase the self-confidence of the SC subjects, which in turn increases the probability to enter competition. The effect sizes are 6.6 percentage point higher probability of choosing the tournament when believing oneself to be a winner and a 1 percentage point higher probability of entering the tournament for every 1 percent higher perceived chance of winning. Since the overall mean tournament entry rate is 0.225, the increase due to winner prediction represents a nearly 30% increase over baseline.

The results clearly show that it is AA policies interacted with SC subjects that drive beliefs, and beliefs in turn which increase tournament entry.

Table 5. Determinants of tournament choice in part 3

	(1)	(2)	(3)	(4)
Step 2: Dependent variable: Tournament choice in part 3				
Predicted belief on being a winner	0.60***	0.66***	-	-
	(0.11)	(0.10)		
Predicted belief on chance of winning	-	-	0.01***	0.01***
			(<0.001)	(<0.001)
Socio-demographic variables	*No*	*Yes*	*No*	*Yes*
Step 1: Dependent variable:	*Belief on being a winner in part 3*		*Belief on chance of winning in part 3*	
Scheduled Castes subjects (SC)	-0.02	-0.01	-0.63	-1.27
	(0.06)	(0.06)	(3.21)	(3.36)
Treatment T1	0.02	0.04	0.11	0.31
	(0.08)	(0.08)	(4.06)	(4.50)
Treatment T2	<0.01	0.02	1.39	1.36
	(0.06)	(0.06)	(3.37)	(3.53)
Treatment T3	0.02	0.03	-0.23	-0.96
	(0.06)	(0.05)	(3.50)	(3.71)
SC*T1	-0.05	-0.06	-4.39	-3.69
	(0.08)	(0.08)	(5.17)	(5.08)
SC*T2	0.22**	0.20**	8.07*	8.58**
	(0.10)	(0.09)	(4.57)	(4.35)
SC*T3	0.20**	0.19**	12.55***	13.42***
	(0.09)	(0.09)	(4.83)	(4.97)
Score in part 2	0.03***	0.03***	2.29***	1.87***
	(0.01)	(0.01)	(0.45)	(0.37)
Socio-demographic variables	*No*	*Yes*	*No*	*Yes*
Number of observations	672	669	672	669
Log pseudo-likelihood	-697.7	-675.8	-3325.02	-3280.5
Prob>chi2	<0.001	<0.001	<0.001	<0.001

Notes: Clustered standard errors at the village level are in parentheses. The four columns report marginal effects. In the first step estimation, the dependent variable in columns (1) and (2) is the belief that the subject will be among the winners in part 3; the dependent variable in columns (3) and (4) is the belief about the chance of winning in part 3. In the second step, a probit model estimates the probability to choose the tournament in part 3. ***, **, and * indicate significance at the 0.01, 0.05, and 0.1 level, respectively.

The spillover effects of AA on confidence and competitiveness

We summarize the spillover effects of AA on confidence and competitiveness as follows:

Result 3. The caste gap in confidence and competitiveness reverts as soon as the AA intervention is removed, showing no evidence of a spillover effect of AA on confidence and competitiveness. This does not support our third conjecture.

Support for Result 3. Considering all the subjects regardless of their payment scheme choice, Table 4 shows that there is no spillover effects of the AA interventions on relative self-confidence, when comparing beliefs in part 4B to beliefs in parts 3 and 4A.[16] Remember that in part 4A, subjects are given the choice of submitting their part 1 performance to tournaments with AA or to a piece rate; in part 4B, subjects again are given the choice of submitting their part 1 performance to tournament or piece rate, but now AA is removed. Table 4 shows that the caste gap in the proportion of subjects who believe they will be winners is about the same in part 4A and in part 3 when AA is available (in part 3, the proportion is 0.15 point higher for SC than GC in T2 and 0.16 point in T3, both significant at the 10% level (*t*-test, clustered), and the respective values in part 4A are 0.09 and 0.18, the second being significant at the 5% level). In contrast, as soon as the intervention is removed, the caste gap in confidence reverts to the benefit of the GC subjects: in part 4B, the proportion is 0.11 point higher for GC than SC in T2 (p=0.13), and 0.14 points higher in T3 (significant at the 10% level). Table 4 shows that the evolution of beliefs is qualitatively similar if considering instead the reported percent chance of being winners: while the SC subjects are significantly more confident in their chance of winning the tournament than the GC subjects in parts 3 and 4A when they benefit from AA, the

[16] We cannot consider absolute self-confidence here. Indeed, since part 4 does not involve any new task and refers back simply to part 1 score, the absolute self-confidence measure would be the same as that in part 1.

caste gap is reverted in part 4B to the statistically insignificant non AA level. Removing AA policies lower perceptions about success to the part 4 level in T0, where caste is silent.

Regarding competitiveness, Figure 1 shows a substantial decrease in entry among the SC subjects and a substantial increase among the GC subjects in part 4B compared to parts 3 and 4A. In T2, the entry rate of SC subjects is 0.34 in part 3, 0.33 in part 4A, but goes down to 0.23 when quotas are removed (Wilcoxon signed rank test, W hereafter, p=0.05 and 0.05 when part 3 and part 4A are compared to part 4B, respectively); the respective values for the GC subjects are 0.17, 0.23 and 0.32 (W test, p=0.02 and 0.14 when part 3 and part 4A are compared to part 4B, respectively). In T3, the entry rate of SC subjects is 0.31 in part 3, 0.38 in part 4A, and decreases to 0.18 when the preferential treatment is removed (W test, p=0.02 and <0.01 when part 3 and part 4A are compared to part 4B, respectively); the respective values for the GC subjects are 0.19, 0.14 and 0.27 (W test, p=0.10 and <0.01 when part 3 and part 4A are compared to part 4B, respectively).[17] As a result, the caste gap that had previously opened in favor of the SC subjects under AA is now closed or even reversed.

3.2. The spillover effects of AA on unethical behavior and the bias against out-groups

We now explore whether introducing AA affects the willingness of individuals to hurt a subject from the other caste. Indeed, because of AA some GC subjects may fear losing the tournament although they were among the top two performers. Subjects do not receive any feedback on the outcome of the tournament before the end of the session, but if they anticipate being downgraded because of AA, they may be willing to cheat in the last part of the experiment to compensate for this possible loss, especially when they are matched with a subject from the protected caste and that payoffs are unaligned.[18] Our last result can be summarized as follows:

[17] We conducted a similar two-step regression analysis as in Table 5 to explain the determinants of the tournament choice in part 4B when AA is removed. The results are reported in Table A1 in Appendix 5. They show that the predicted values of beliefs are still strong and significant predictors of tournament choice like in part 3, but in contrast to part 3, beliefs are no longer explained by the treatment, as the treatment variables are all non-significant.

[18] In part 2, when tournament is compulsory, the rate of winners among GC subjects in T2 is 0.20 whereas the rate of top performers among GC subjects is 0.31; in T3, these rates are 0.25 and 0.38, respectively (see Figure

Result 4. AA interventions do not increase misreporting among the members of any caste. They do not generate the strong bias that the GC subjects hold against their out-groups from the protected caste, although they tend to increase it. This does not fully support our fourth conjecture.

Support for Result 4. We compare the outcomes of the die roll task across treatments and conditions. Table 6 presents summary statistics on reporting behavior by treatment and caste, successively for when payoffs are aligned and for when they are unaligned. It indicates the observed relative frequency of reports higher than 3, *i.e*. outcomes that pays more than the expected outcome (the expected mean outcome of truthful reporting is 3.5). P-values are reported from two-sided binomial tests comparing the observed frequencies and the theoretical frequency for a fair die (50%). Wilcoxon signed-rank tests are used to compare reporting behavior when the matched partner is from the same caste (in-group) and when he is from the other caste (out-group). We use Mann-Whitney rank-sum tests to compare reports across treatments, with T0 as the benchmark, to test whether the previous use of AA affects the bias towards in-groups and out-groups. We take each report as an independent observation. Table 6 also displays the mean estimated percent of subjects who misreport an outcome higher than 3 and its 95% confidence interval, using the econometric technique of Garbarino *et al*. (2016).[19]

A4 in Appendix 5). This indicates that in both treatments some GC high-performers have been passed over by less able SC subjects. In part 3, the difference is less visible, partly because of self-selection (see Figure A5 in Appendix 5). In T2 the rate of GC subjects who win the tournament, conditional on choosing it, is 0.07 whereas the rate of top performers is 0.07; in T3, these rates are 0.10 and 0.08, respectively. Naturally, we find the opposite tendency for the SC subjects. In part 2, the rate of SC winners is 0.46 in T2 and 0.43 in T3, whereas their rate of top two performers is 0.36 in T2 and 0.29 in T3. In part 3, the rate of SC subjects who win the tournament, conditional on choosing it, is 0.20 in T2 and 0.16 in T3, whereas their rate of top two performers is 0.16 in T2 and 0.10 in T3.

[19] This technique estimates the full distribution of the percentage of individuals who lie when they have an incentive to report dishonestly (here: reporting a number higher than 3 when getting a number lower than 4). By determining the PDF and CDF of dishonesty, it gives a precise estimate of the mean and the lower and upper bounds on the percent of subjects reporting dishonestly that can be inferred from the full distribution.

Table 6. Summary statistics on lying in the die rolling task

Treatments	T0		T1		T2		T3	
Caste	GC	SC	GC	SC	GC	SC	GC	SC
ALIGNED PAYOFFS								
Percent of reports>3								
- Same caste partner	77.38***	77.38***	83.72***	80.49***	73.17***	88.37***	84.21***	76.47***
- Other caste partner			65.12*	73.17***	53.66	81.40***	57.89	73.53***
Number of observations	84	84	43	41	41	43	38	34
Comparison same/ other caste (*p*-values)	-	-	0.032	0.439	0.039	0.317	0.04	0.763
Comparison T*i*-T0 (*p-values*)								
- Same caste partner	*Ref.*	*Ref.*	0.546	0.472	0.750	0.088	0.521	0.791
- Other caste partner			0.265	0.402	0.032	0.959	0.083	0.443
Mean percent lying (CI)								
- Same caste partner	54.20 (43-63)	54.20 (43-63)	66.63 (55-75)	59.95 (46-71)	44.97 (25-60)	76.16 (68-82)	67.52 (55-76)	51.44 (32-65)
- Other caste partner			29.15 (8-47)	44.97 (25-60)	12.50 (0-31)	61.86 (48-72)	17.67 (0-38)	45.44 (24-61)
UNALIGNED PAYOFFS								
Number reports>3 (%)								
- Same caste partner	68.89***	66.67**	57.14	57.14	60.0	56.82	60.0	63.04
- Other caste partner	90	78	73.81***	66.67**	77.5***	59.09	80.0***	60.81
Number of observ.			42	42	40	44	50	46
Comparison same/ other caste (*p*-values)	-	-	0.144	0.346	0.089	0.818	0.050	0.818
Comparison T*i*-T0 (*p-values*)								
- Same caste partner	*Ref.*	*Ref.*	0.176	0.263	0.284	0.246	0.259	0.551
- Other caste partner			0.470	0.810	0.271	0.642	0.143	0.761
Mean percent lying (CI)								
- Same caste partner	37.07 (23-49)	32.48 (16-46)	16.44 (0-36)	16.44 (0-36)	20.55 (0-40)	15.91 (0-35)	20.21 (0-38)	25.39 (0-44)
- Other caste partner			46.30 (27-60)	32.07 (10-50)	53.79 (37-66)	19.03 (0-38)	59.15 (46-69)	21.71 (0-40)

Note: In T0, there is no information on partner's caste identity. Thus, we pool the data from the two die rolls. Regarding the number of reports higher than 3, ***, **, and * indicate significance at the 0.1, 0.05 and 0.001 levels, respectively, from binomial tests comparing each frequency with the expected value of 50%. The *p*-values for the comparisons same/other caste come from Wilcoxon signed-rank tests. Those for the comparisons T*i*-T0, with *i*=1,2,3, are from Mann-Whitney tests. For the mean percent lying statistics, the data in parentheses represent the confidence interval, *i.e*. the minimum and the maximum estimated percent of subjects lying.

Figure 2 displays the mean lying rates and confidence intervals in each configuration. The top left panel is for GC and the top right panel for SC when payoffs are aligned. The bottom left panel is for GC and the bottom right panel for SC when payoffs are unaligned. Each panel represents the mean lying rate per treatment, depending on whether the subjects is matched with an in-group or an out-group.

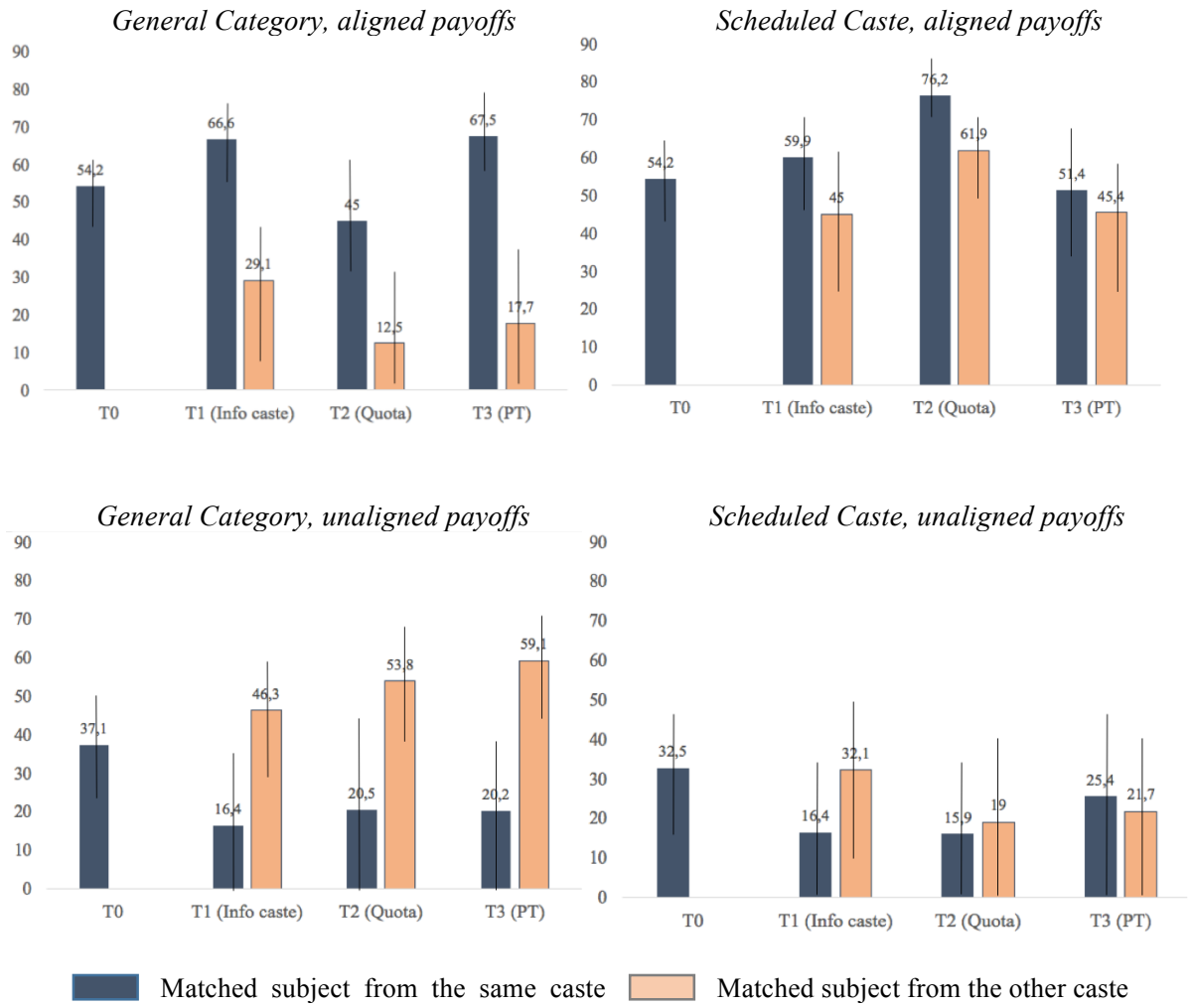

Figure 2: Mean lying rates and confidence intervals, by caste, partner's caste, condition and treatment

Table 6 shows evidence of widespread lying when payoffs are aligned, as in all treatments subjects report high payoff outcomes significantly more often than the expected 50%. In the absence of caste identity (T0), subjects tend to lie less when payoffs are unaligned than when they are aligned, suggesting that a fraction of people who accept Pareto white lies are not willing to tell black lies (there is very little overlapping between the CI). Strikingly, when caste identity is introduced Table 6 and Figure 5 show a very different pattern between GC and SC subjects. All categories tend to lie more (less) when it benefits (harms, respectively) an in-group rather than an out-group. But while the difference is never significant for the SC subjects, the difference is highly significant in most cases (no overlapping between the CI) for the GC

subjects who express a strong bias against the SC subjects. Comparing figures in the top left and the bottom left panels, we can see that many GC subjects refrain from lying when misreporting also benefits a SC subject: they prefer foregoing a gain to avoid helping someone from the other caste. When lying harms a SC subject, GC players lie almost as much as when the lie benefits an in-group: increasing one's payoff by lying when it harms an out-group generates as much utility as when it helps an in-group. Comparing the top right and bottom right panels reveals that in contrast to GC subjects, SC subjects discriminate little between castes and they tell less black lies than Pareto-white lies.

How do AA interventions impact this behavior? They do not increase lying and the bias against out-groups exists even in their absence (*i.e.*, in T1), especially for the GC subjects. However, for these GC subjects it seems to increase slightly with the Preferential Treatment, while one can discern a movement in the opposite direction for the protected caste. Indeed, when payoffs are aligned the gap in the GC subjects' mean lying rate according to the partner's caste is 37.48 percentage points in T1, 32.47 in T2 (with quotas) and 49.85 in T3 (with Preferential Treatment) (respectively 14.98, 14.3 and 6 for SC subjects). Moreover, the GC subjects tend to lie less under AA than without when a higher report also benefits a member from the protected caste. When payoffs are unaligned, the gap in the GC subjects' mean lying rate is 29.86 percentage points in T1, 33.24 in T2 and 38.94 in T3 (respectively 15.7, 3.12 and 3.68 for SC subjects). Finally, the GC subjects tend to lie more under AA when a higher report harms a member from the protected caste. This confirms that if AA interventions do not boost dishonesty and do not generate the bias against the members of the protected caste, they somewhat tend to increase it.

4. Discussion and conclusion

We conducted an artefactual field experiment to examine the potential spillover effects of Affirmative Action policies (quotas and preferential treatment) in the context of castes in India. We first examined whether individuals who had previously benefitted from AA protection would have developed a sufficient taste for competition and confidence in their own abilities that led them to continue to compete even after the AA policies were removed. Second, we explored whether being exposed to AA policies affects individuals' ethical behavior. In particular, we tested whether behavior is conditioned on being matched with in-groups *vs*. out-groups when reporting affects not only one's payoff but also the payoff of another individual. Finally, we studied whether reporting differs between subjects from the dominant category and individuals belonging to the category benefiting from the AA interventions.

We find that our AA interventions have an immediate impact on the individuals' relative self-confidence. By increasing the optimism of the beneficiary category regarding their ability to win the tournament and their chance to win, they boost quite substantially its willingness to compete. This result points to the importance of retaining AA policies for the purpose of fostering self-confidence and a desire to compete among the traditionally deprived castes in India. However, we find very limited spillover effects of AA interventions on further confidence and competitiveness. Indeed, as soon as the policies are removed, the caste gap in confidence and competitiveness reverts, revealing a very short-term effect of our interventions on self-onfidence. As regards the spillovers of these policies on (un)ethical behavior and harm against the members from the protected caste, we show that they are also limited. Overall, the AA interventions do not increase cheating and the strong bias of the members of the upper caste against the protected caste preexists to these interventions. However, if AA interventions do not generate this bias, the preferential treatment tends to increase it.

Our results regarding the absence of spillovers of AA interventions on competitiveness should be appreciated in the view that in our population, the gap in competitiveness was not significant in the treatments without our AA interventions. Although this gap was not significant, we have found, however, that as soon as the caste composition of the group was made public, the competitiveness of the upper caste increased while that of the lower caste decreased. Significant deficits appeared both in absolute and relative confidence of the subjects from the protected caste relative to those from the high caste. It would be interesting, though, to replicate our study in other locations to test whether our results hold when there is a larger initial gap in competitiveness. Another possible extension would be to increase the duration of the experiment to see whether spillovers are more likely to emerge when subjects have benefited from AA for a longer period of time before the intervention is removed.

Finally, our results on the spillover effects of AA on misreporting and the bias against out-groups from the protected caste are consistent with previous studies showing the strong and durable segmentation of the Indian society. This suggests exploring more directly how these types of measures could evolve to contribute to a better integration of the different groups. This is left for further investigation.

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Appendix 1. Instructions for all treatments

Introduction (Common for all)

Welcome!

Thank you all for taking the time to come today. Today's session will take less than two hours. Before we begin, I want to make some general comments about what we are doing here today and explain the rules that you must follow.

You have each received an anonymous identification number. At some point, you will interact with other participants: you will never know their identity or their choices. Similarly, the other participants will never know your identity and your choices. All your choices and responses are anonymous.

The session consists of several tasks. At the end of the session, one of these tasks will be randomly selected to determine your earnings in this experiment. Therefore, each task may count for determining your earnings. The method we use to determine your earnings varies across tasks. Before each task we will describe in detail how your payment is determined.

Whatever money you earn in the session will be yours to keep and take home. In addition to the money you earn in the session, we will pay you **Rs. 100 for your participation today**. Your earnings will be paid to you in cash and in private at the end of the session.

At the end of the session, you will have to fill out a questionnaire with a list of simple questions. We are about to begin the first task. It is important that you listen as carefully as possible. We will distribute the instructions for the following task at the end of this first part.

If you have any question, please raise your hand and we will answer your questions in private. Please do not ask questions to the other participants or talk about the game with them at any point during today's session. This is very important. Please be sure that you obey this rule.

Instruction for Baseline Treatment (T0)

We will describe below the instructions for Task 1. We will distribute the instructions for the following task at the end of this task.

Task 1. Piece rate [Common for T0, T1, T2 and T3]

For Task 1, you will be asked to memorize and report numbers and then, we will ask you some questions.

We will dictate fifteen numbers between 1 and 100. Each number will be dictated twice. After the completion of the dictation, you will be asked to recall as many numbers as you can and then write them down on the response sheet provided to you within 3 minutes. You do not have to write the numbers down in the order in which they were dictated. Just write down as many numbers as you can recall.

Note that **you are not allowed to write anything while the dictation is going on; otherwise you will be excluded from the session**. **This is an individual task, so it is not permitted to discuss the numbers with any of the other participants**. **Doing so will also lead to exclusion from the session.** So you should listen carefully what the numbers are, memorize them and then reproduce as many of these numbers as you can on the response sheet. You cannot write more than 15 numbers (any number that would be reported after the 15th one would not be considered).

We will now play a practice round of this task with only 5 numbers. You will not earn anything from this practice round but please follow the instructions carefully.

--Practice: please listen to the 5 numbers and report them on your reporting sheet--

If Task 1 is the one randomly selected for payment, then you get Rs.10 per number you recall correctly in the 3 minutes. For example, if you recall correctly 2 numbers, you will earn 2 x 10 = Rs. 20; if you recall 10 numbers, you will earn 10 x 10 = Rs. 100. Your payment does not decrease if you report an incorrect number.

We refer to this payment as the **piece rate payment**.

If you have any question, please raise your hand and we will answer your question in private.

--Task 1 will start now. Please listen to the dictated numbers carefully and do not write anything before you are invited to do so. --

-- Now, please write down as many of the dictated numbers as you can recall in the next 3 minutes. --

-- Three minutes are over. Please stop writing immediately. --

Question 1.1

-- Please indicate on your reporting sheet in the box in front of "Question 1.1" how many numbers out of those you have reported you think you have correctly recalled. If this task is selected for payment, you will receive an additional Rs. 50 if your prediction matches your actual score. --

Task 2. Tournament

As in Task 1, after listening to a series of 15 dictated numbers, you will be given 3 minutes to write down as many recalled numbers as possible (in the limit of 15). However, for this task your payment depends on your performance relative to that of a group of other participants.

Each group consists of six people. Thus, you are in a group with five other people present in this session. You will not know who the five other people in your group are. The composition of your group of six remains the same until you are no longer in a group of six.

If Task 2 is the one randomly selected for payment, then your earnings depend on your number of correct recalls compared to that of the five other people in your group. The two group members who correctly recall the most numbers are the winners. They will receive Rs. 30 each per correct recall, while the four other group members receive no payment. So if you are among the two top performers, then you will earn Rs. 30 for each correct number that you recall in this task

You will not be informed of how you did in the tournament relative to others until all four tasks have been completed. If there are ties the winner will be randomly determined.

We refer to this as the **tournament payment**.

If you have any question, please raise your hand and we will answer your question in private.

--Task 2 will start now. Please listen to the dictated numbers carefully and do not write anything before you are invited to do so. --

-- Now, please write down as many of the dictated numbers as you can recall in the next 3 minutes. --

-- Three minutes are over. Please stop writing immediately. --

***Question 2.1**. Please indicate on your reporting sheet in the box in front of "Question 2.1" how many numbers out those you have reported you think you have correctly recalled. If this task is selected for payment, you will receive an additional Rs. 50 if your prediction matches your actual score.*

***Question 2.2**. Please indicate on your reporting sheet in the box in front of "Question 2.2" which rank, between 1 and 6 you think you have got in Task 2, compared to the five other group members. A rank of 1 means you think you got the highest number of correct recalls in the group and rank 6 means you think you got the lowest number of correct recalls in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. –*

***Question 2.3**. Please indicate on your reporting sheet in the box in front of "Question 2.3" what is the chance that you will be among the top two scorers in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two scorers in*

your group of six, 100 if you are absolutely sure that you are among the top two scorers, and some number in between 0 and 100 depending on how sure you are of being among the top two scorers. The higher this number, the more confident you are in being among the top two scorers. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the top two are. If you are interested in knowing how your bonus is calculated, ask us after the study is over.

Task 3. Choice

As in the previous two tasks, after listening to a series of 15 dictated numbers, you will be given 3 minutes to write down as many recalled numbers as possible. However, before that, you will get to choose which of the two previous payment modes you prefer to apply to your performance in Task 3. You can either choose to be paid according to the *piece rate*, or according to the *tournament*.

If Task 3 is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate* (i.e. the payment mode used in Task 1), you receive Rs. 10 per number correctly recalled.
- If you choose the *tournament* (i.e. the payment mode used in Task 2), your performance in Task 3 will be evaluated relative to the performance of the other five participants of your group in the Task 2 -Tournament. The Task 2-tournament is the one you just completed. If you correctly recall more numbers than four of your other group members in Task 2, then you receive Rs. 30 for each correctly recalled number. You will receive no earnings for this task if you choose the tournament and are not among the two winners. You will not be informed of how you did in the tournament until the end of the session. If there are ties the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--Task 3 will start now.

Question 3.1. Please indicate on your reporting sheet which payment scheme you prefer to apply to your performance in Task 3. Strike through the option which you would not like to select and circle the option which you would like to select:

Example 1: If you want to be paid according to Piece rate and not according to Tournament, you should enter:

Piece rate

~~*Tournament*~~

Example 2: If you want to be according to Tournament and not according to Piece rate you should enter:

~~*Piece rate*~~

Tournament

Please select your payment option here:

1. *Piece rate*
2. *Tournament*

Now, please listen to the dictated numbers carefully and do not write anything before you are invited to do so. --

-- Now, please write down as many of the dictated numbers as you can recall in the next 3 minutes. --

-- Three minutes are over. Please stop writing immediately. --

Question 3.2. *Please indicate on your reporting sheet in the box in front of "Question 3.2" how many numbers out of those you have reported you think you have correctly recalled. If this task is selected for payment, you will receive an additional Rs. 50 if your prediction matches your actual score.*

Question 3.3. *Please indicate on your reporting sheet in the box in front of "Question 3.3" which rank, between 1 for the highest number of correct recalls to 6 for the lowest number of correct recalls, you think you have got in Task 3, compared to the five other group members in Task 2. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question even if you have chosen the piece rate payment mode. –*

Question 3.4. *Please indicate on your reporting sheet in the box in front of "Question 3.4" what is the chance that you will be among the top two scorers in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two scorers in your group of six, 100 if you are absolutely sure that you are among the top two scorers, and some number in between 0 and 100 depending on how sure you are of being among the top two scorers. The higher this number, the more confident you are in being among the top two scorers. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the top two are. If you are interested in knowing how your bonus is calculated, ask us after the study is over. We ask you to answer this question even if you have chosen the piece rate payment mode. --*

Task 4. Choice 2

In contrast to the previous tasks, you will not have to recall numbers for this Task. Instead you will be paid one more time for the numbers you recalled in **Task 1-Piece rate**. However, you will have to choose which payment mode you prefer to apply to your performance in **Task 1** (when you were paid Rs. 10 per number correctly recalled). You can either choose to be paid according to the *piece rate* or according to the *tournament*.

If Task 4 is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate*, you receive Rs. 10 per number correctly recalled in **Task 1**.
- If you choose the *tournament*, your performance in **Task 1** will be evaluated relative to the performance of the other five participants of your group in the Task 1. If you correctly recalled in Task 1 more numbers than four of your other group members in Task 1, then you receive Rs. 30 for each number that you correctly recalled. You will receive no earnings for this task if you choose the tournament and are not among the two winners. You will not be informed of how you did in the tournament until the end of the session. If there are ties the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--Task 4 will start now.

Question 4.1. *Please indicate on your reporting sheet which* payment scheme you prefer to apply to your performance in **Task 1** and strike through the option which you would not like to select and circle the option which you would like to select.

1. *Piece rate*
2. *Tournament*

Question 4.2. *Please indicate on your reporting sheet in the box in front of "Question 4.2" which rank, between 1 for the highest number of correct recalls to 6 for the lowest number of correct recalls, you think you have got in Task 1, compared to the five other group members in Task 1. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question even if you have chosen the piece rate payment mode. --*

***Question 4.3**. Please indicate on your reporting sheet in the box in front of "Question 4.3" what is the chance that you will be among the top two scorers in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two scorers in your group of six and 100 if you are absolutely sure that you are among the top two scorers and some number in between 0 and 100 depending on how sure you are of being among the top two scorers. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the top two are. If you are interested in knowing how your bonus is calculated, ask us after the study is over. We ask you to answer this question even if you have chosen the piece rate payment mode. --*

Task 5-A Die (Unaligned condition)

You are no longer in a group of six participants. In this Task you are paired successively with two other participants of your group of six.

You have received two cups. Each cup contains a die. Do not open the cups but look under the lid. In one cup, the die is blue. In the other cup, the die is red.

- The cup with the **blue die** must be used to determine your payoff and the payoff of another participant
- The cup with the **red die** must be used to determine your payoff and the payoff of another participant

What happens in the first pair?

Both you and your co-participant will have to roll a die that is inside one of the cups. But only the outcome reported by one of you two will count to determine your payoffs in this Task. A random draw at the end of the session will determine whether it is the outcome that *you* report or the outcome reported by *the other participant* that will determine your payoffs.

You will roll the die twice by shaking the cup and flipping it over. You have to report the outcome of the **first** roll only. To see the outcome, just look under the lid.

Your **first** roll decides on how much you and the other participant earn in this part (if it is your report that is selected at the end of the session). The second roll only serves to make sure that the die is working properly. You may of course roll the die more than twice. However, **only the first roll counts**.

You can see the payoffs from the following chart.

Outcome of the 1st roll	1	2	3	4	5	6
Payoff of the participant rolling	Rs. 10	Rs. 20	Rs. 30	Rs. 40	Rs. 50	Rs. 60
Payoff of the other participant	Rs. 60	Rs. 50	Rs. 40	Rs. 30	Rs. 20	Rs. 10

For example, if 1 is the reported outcome from the die roll, the participant who rolls the die earns Rs.10 and the other participant earns Rs.60. If 2 is the reported outcome from the die roll, the participant who rolls the die earns Rs.20 and the other participant earns Rs.50. And so on.

What happens in the second pair?

The rules are exactly the same as for the first pair, except that you are paired with a different participant. When the experimenter will instruct you to start, you can start either by rolling the blue die or by rolling the red die.
Please wait for the experimenter to instruct you to roll the dice. If you have any question, please raise your hand.

Question 5.1. Please report *on your reporting sheet in front of question 51 the outcome of the first two die rolls:*
Blue die: the outcome of the first blue die roll is: 1 2 3 4 5 6
Red die: the outcome of the first red die roll is: 1 2 3 4 5 6

Task 5-B Die (Aligned condition)

You are no longer in a group of six participants. In this Task you are paired successively with two other participants of your group of six.

You have received two cups. Each cup contains a die. Do not open the cups but look under the lid. In one cup, the die is blue. In the other cup, the die is red.

- The cup with the **blue die** must be used to determine your payoff and the payoff of another participant
- The cup with the **red die** must be used to determine your payoff and the payoff of another participant

What happens in the first pair?

Both you and your co-participant will have to roll a die that is inside one of the cups. But only the outcome reported by one of you two will count to determine your payoffs in this Task. A random draw at the end of the session will determine whether it is the outcome that *you* report or the outcome reported by *the other participant* that will determine your payoffs.

You will roll the die twice by shaking the cup and flipping it over. You have to report the outcome of the **first** roll only. To see the outcome, just look under the lid.

Your **first** roll decides on how much you and the other participant earn in this part (if it is your report that is selected at the end of the session). The second roll only serves to make sure that the die is working properly. You may of course roll the die more than twice. However, **only the first roll counts**.
You can see the payoffs from the following chart.

Outcome of the 1st roll	1	2	3	4	5	6
Payoff of the participant rolling	Rs. 10	Rs. 20	Rs. 30	Rs. 40	Rs. 50	Rs. 60
Payoff of the other participant	Rs. 10	Rs. 20	Rs. 30	Rs. 40	Rs. 50	Rs. 60

For example, if 1 is the reported outcome from the die roll, the participant who rolls the die earns Rs.10 and the other participant (whose the reported outcome does not count) earns Rs. 10. If 2 is the reported outcome from the die roll, the participant who rolls the die earns Rs.20 and the other participant earns Rs. 20. And so on.)

What happens in the second pair?

The rules are exactly the same as for the first pair, except that you are paired with a different participant.
When the experimenter will instruct you to start, you can start either by rolling the blue die or by rolling the red die.
Please wait for the experimenter to instruct you to roll the dice. If you have any question, please raise your hand.

Question 5.1. Please report *on your reporting sheet in front of question 5.1 the outcome of the first two die rolls:*
Blue die (pair with a participant from the same caste): the outcome of the first blue die roll is:
1 2 3 4 5 6
Red die (pair with a participant from the other caste): the outcome of the first red die roll is:
1 2 3 4 5 6

Instructions for Treatment 1 (T1)

Task 1. Piece rate [Common for T0, T1, T2 and T3]

Task 2. Tournament

As in Task 1, after listening to a series of 15 dictated numbers, you will be given 3 minutes to write down as many recalled numbers as possible (in the limit of 15). However, for this task your payment depends on your performance relative to that of a group of other participants.

Each group consists of six people, out of which three are from the General Category and three are from the Scheduled Caste category. Thus, you are in a group with five other people present in this session. You will not know who the five other people in your group are. The composition of your group of six remains the same until you are no longer in a group of six.

If Task 2 is the one randomly selected for payment, then your earnings depend on your number of correct recalls compared to that of the five other people in your group. The two group members who correctly recall the most numbers are the winners. They will receive Rs. 30 each per correct recall, while the four other group members receive no payment. So, if you are among the two top performers, then you will earn Rs. 30 for each correct number that you recall in this task

You will not be informed of how you did in the tournament relative to others until all four tasks have been completed. If there are ties the winner will be randomly determined.

We refer to this as the **tournament payment**.

If you have any question, please raise your hand and we will answer your question in private.

--Task 2 will start now. Please listen to the dictated numbers carefully and do not write anything before you are invited to do so. --

-- Now, please write down as many of the dictated numbers as you can recall in the next 3 minutes. --

-- Three minutes are over. Please stop writing immediately. --

*-- **Question 2.1**. Please indicate on your reporting sheet in the box in front of "Question 2.1" how many numbers out of those you have reported you think you have correctly recalled. If this task is selected for payment, you will receive an additional Rs. 50 if your prediction matches your actual score.*

***Question 2.2a**. Please indicate on your reporting sheet in the box in front of "Question 2.2a" which rank, between 1 and 6 you think you have got in Task 2, compared to the five other group members. A rank of 1 means you think you got the highest number of correct recalls in the group and rank 6 means you think you got the lowest number of correct recalls in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. –*

***Question 2.2b**. Please indicate on your reporting sheet in the box in front of "Question 2.2b" which rank, between 1 and 3 you think you have got in Task 2, compared to the three other group members of your own caste. A rank of 1 means you think you got the highest number of correct recalls within your own caste in your group and rank 3 means you think you got the lowest number of correct recalls within your caste in the group and similar for ranks between 1 and 3. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. –*

***Question 2.3**. Please indicate on your reporting sheet in the box in front of "Question 2.3" what is the chance that you will be among the top two scorers in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two scorers in your group of six, 100 if you are absolutely sure that you are among the top two scorers, and some number in between 0 and 100 depending on how sure you are of being among the top two scorers. The higher this number, the more confident you are in being among the top two scorers. You will receive a*

maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the top two are. If you are interested in knowing how your bonus is calculated, ask us after the study is over.

Task 3. Choice

As in the previous two tasks, after listening to a series of 15 dictated numbers, you will be given 3 minutes to write down as many recalled numbers as possible. However, before that, you will get to choose which of the two previous payment modes you prefer to apply to your performance in Task 3. You can either choose to be paid according to the *piece rate*, or according to the *tournament*.

If Task 3 is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate* (i.e. the payment mode used in Task 1), you receive Rs. 10 per number correctly recalled.
- If you choose the *tournament* (i.e. the payment mode used in Task 2), your performance in Task 3 will be evaluated relative to the performance of the other five participants of your group in the Task 2 -Tournament. Remember, out of the six people in each group, three are from General Category and three are from Scheduled Caste category. The Task 2-tournament is the one you just completed. If you correctly recall more numbers than four of your other group members in Task 2, then you receive Rs. 30 for each correctly recalled number. You will receive no earnings for this task if you choose the tournament and are not among the two winners. You will not be informed of how you did in the tournament until the end of the session. If there are ties the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--Task 3 will start now.

Question 3.1. Please indicate on your reporting sheet which payment scheme you prefer to apply to your performance in Task 3. Strike through the option which you would not like to select and circle the option which you would like to select:

Example 1: If you want to be paid according to Piece rate and not according to Tournament, you should enter:

Piece rate

~~*Tournament*~~

Example 2: If you want to be according to Tournament and not according to Piece rate you should enter:

~~*Piece rate*~~

Tournament

Please select your payment option here:

1. *Piece rate*
2. *Tournament*

Now, please listen to the dictated numbers carefully and do not write anything before you are invited to do so. --

-- Now, please write down as many of the dictated numbers as you can recall in the next 3 minutes. --

-- Three minutes are over. Please stop writing immediately. --

--Question 3.2*. Please indicate on your reporting sheet in the box in front of "Question 3.2" how many numbers out of those you have reported you think you have correctly recalled. If this task is selected for payment, you will receive an additional Rs. 50 if your prediction matches your actual score.*

Question 3.3a*. Please indicate on your reporting sheet in the box in front of "Question 3.3a" which rank, between 1 for the highest number of correct recalls to 6 for the lowest number of correct recalls, you think you have got in Task 3, compared to the five other group members in Task 2. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question <u>even if</u> you have chosen the piece rate payment mode.*

Question 3.3b*. Please indicate on your reporting sheet in the box in front of "Question 3.3b" which rank, between 1 and 3 you think you have got in Task 2, compared to the three other group members of your own caste. A rank of 1 means you think you got the highest number of correct recalls within your own caste in your group and rank 3 means you think you got the lowest number of correct recalls within your caste in the group and similar for ranks between 1 and 3. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. – –*

Question 3.4. *Please indicate on your reporting sheet in the box in front of "Question 3.4" what is the chance that you will be among the top two scorers <u>in your group of six</u> in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two scorers <u>in your group of six</u>, 100 if you are absolutely sure that you are among the top two scorers, and some number in between 0 and 100 depending on how sure you are of being among the top two scorers. The higher this number, the more confident you are in being among the top two scorers. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the top two are. If you are interested in knowing how your bonus is calculated, ask us after the study is over. We ask you to answer this question <u>even if</u> you have chosen the piece rate payment mode. --*

Task 4 - Choice 2

In contrast to the previous tasks, you will not have to recall numbers for this Task. Instead you will be paid one more time for the numbers you recalled in **Task 1-Piece rate**. However, you will have to choose which payment mode you prefer to apply to your performance in **Task 1** (when you were paid Rs. 10 per number correctly recalled). You can either choose to be paid according to the *piece rate* or according to the *tournament*.

If Task 4 is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate*, you receive Rs. 10 per number correctly recalled in **Task 1**.
- If you choose the *tournament*, your performance in **Task 1** will be evaluated relative to the performance of the other five participants of your group in the Task 1. Remember, out of the six people in each group, three are from General Category and three are from Scheduled Caste category. If you correctly recalled in Task 1 more numbers than four of your other group members in Task 1, then you receive Rs. 30 for each number that you correctly recalled. You will receive no earnings for this task if you choose the tournament and are not among the two winners. You will not be informed of how you did in the tournament until the end of the session. If there are ties the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--Task 4 will start now.

Question 4.1*. Please indicate on your reporting sheet which* payment scheme you prefer to apply to your performance in **Task 1** and strike through the option which you would not like to select and circle the option which you would like to select.

1. *Piece rate*

2. *Tournament*

Question 4.2a. *Please indicate on your reporting sheet in the box in front of "Question 4.2" which rank, between 1 for the highest number of correct recalls to 6 for the lowest number of correct recalls, you think you have got in Task 1, compared to the five other group members in Task 1. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question even if you have chosen the piece rate payment mode. –*

Question 4.2b. *Please indicate on your reporting sheet in the box in front of "Question 4.2b" which rank, between 1 and 3 you think you have got in Task 2, compared to the three other group members of your own caste. A rank of 1 means you think you got the highest number of correct recalls within your own caste in your group and rank 3 means you think you got the lowest number of correct recalls within your caste in the group and similar for ranks between 1 and 3. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct.*

Question 4.3. *Please indicate on your reporting sheet in the box in front of "Question 4.3" what is the chance that you will be among the top two scorers in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two scorers in your group of six and 100 if you are absolutely sure that you are among the top two scorers and some number in between 0 and 100 depending on how sure you are of being among the top two scorers.. We ask you to answer this question even if you have chosen the piece rate payment mode. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the top two are. If you are interested in knowing how your bonus is calculated, ask us after the study is over. We ask you to answer this question even if you have chosen the piece rate payment mode. --*

Task 5-A – Die (Unaligned condition) [Common for T1, T2 and T3]

You are no longer in a group of six participants. In this Task you are paired successively with two other participants of your group of six. In one case, you are paired with someone from the same caste as you and in the other case you are paired with someone from the other caste.

You have received two cups. Each cup contains a die. Do not open the cups but look under the lid. In one cup, the die is blue. In the other cup, the die is red.

- The cup with the **blue die** must be used to determine your payoff and the payoff of another participant from **your own caste.**
- The cup with the **red die** must be used to determine your payoff and the payoff of another participant from **the other caste.**

What happens in the first pair?

Both you and your co-participant will have to roll a die that is inside one of the cups. But only the outcome reported by one of you two will count to determine your payoffs in this Task. A random draw at the end of the session will determine whether it is the outcome that *you* report or the outcome reported by *the other participant* that will determine your payoffs.

You will roll the die twice by shaking the cup and flipping it over. You have to report the outcome of the **first** roll only. To see the outcome, just look under the lid.

Your **first** roll decides on how much you and the other participant earn in this part (if it is your report that is selected at the end of the session). The second roll only serves to make sure that the die is working properly. You may of course roll the die more than twice. However, **only the first roll counts**.

You can see the payoffs from the following chart.

Outcome of the 1st roll	1	2	3	4	5	6
Payoff of the participant rolling	Rs. 10	Rs. 20	Rs. 30	Rs. 40	Rs. 50	Rs. 60
Payoff of the other participant	Rs. 60	Rs. 50	Rs. 40	Rs. 30	Rs. 20	Rs. 10

For example, if 1 is the reported outcome from the die roll, the participant who rolls the die earns Rs.10 and the other participant earns Rs. 60. If 2 is the reported outcome from the die roll, the participant who rolls the die earns Rs.20 and the other participant earns Rs. 50. And so on.

What happens in the second pair?

The rules are exactly the same as for the first pair, except that you are paired with a different participant.

When the experimenter will instruct you to start, you can start either by rolling the blue die or by rolling the red die.

Please wait for the experimenter to instruct you to roll the dice. If you have any question, please raise your hand.

Question 5.1. Please report *on your reporting sheet in front of question 51 the outcome of the first two die rolls:*

Blue die (pair with a participant from the same caste): the outcome of the first blue die roll is:
1 2 3 4 5 6

Red die (pair with a participant from the other caste): the outcome of the first red die roll is:
1 2 3 4 5 6

Task 5-B Die (Aligned condition) [Common for T1, T2 and T3]

You are no longer in a group of six participants. In this Task you are paired successively with two other participants of your group of six. In one case, you are paired with someone from the same caste as you and in the other case you are paired with someone from the other caste*)*.

You have received two cups. Each cup contains a die. Do not open the cups but look under the lid. In one cup, the die is blue. In the other cup, the die is red.

- The cup with the **blue die** must be used to determine your payoff and the payoff of another participant from **your own caste.**
- The cup with the **red die** must be used to determine your payoff and the payoff of another participant from **the other caste.**

What happens in the first pair?

Both you and your co-participant will have to roll a die that is inside one of the cups. But only the outcome reported by one of you two will count to determine your payoffs in this Task. A random draw at the end of the session will determine whether it is the outcome that *you* report or the outcome reported by *the other participant* that will determine your payoffs.

You will roll the die twice by shaking the cup and flipping it over. You have to report the outcome of the **first** roll only. To see the outcome, just look under the lid.

Your **first** roll decides on how much you and the other participant earn in this part (if it is your report that is selected at the end of the session). The second roll only serves to make sure that the die is working properly. You may of course roll the die more than twice. However, **only the first roll counts**.

You can see the payoffs from the following chart.

Outcome of the 1st roll	1	2	3	4	5	6
Payoff of the participant rolling	Rs. 10	Rs. 20	Rs. 30	Rs. 40	Rs. 50	Rs. 60
Payoff of the other participant	Rs. 10	Rs. 20	Rs. 30	Rs. 40	Rs. 50	Rs. 60

For example, if 1 is the reported outcome from the die roll, the participant who rolls the die earns Rs.10 and the other participant (whose the reported outcome does not count) earns Rs. 10. If 2 is the reported outcome from the die roll, the participant who rolls the die earns Rs.20 and the other participant earns Rs. 20. And so on.)

What happens in the second pair?

The rules are exactly the same as for the first pair, except that you are paired with a different participant.

When the experimenter will instruct you to start, you can start either by rolling the blue die or by rolling the red die.

Please wait for the experimenter to instruct you to roll the dice. If you have any question, please raise your hand.

Question 5.1. Please report *on your reporting sheet in front of question 5.1 the outcome of the first two die rolls:*

Blue die (pair with a participant from the same caste): the outcome of the first blue die roll is:
1 2 3 4 5 6
Red die (pair with a participant from the other caste): the outcome of the first red die roll is:
1 2 3 4 5 6

Instructions for Treatment 2 (T2)

Task 1. Piece rate [Common for T0, T1, T2 and T3]

Task 2. Quota-Tournament

As in Task 1, after listening to a series of 15 dictated numbers, you will be given 3 minutes to write down as many recalled numbers as possible (in the limit of 15). However, for this task your payment depends on your performance relative to that of a group of other participants through a method called ***Quota-Tournament.***

Before proceeding, we explain the rules of ***Quota-Tournament.***

Each group consists of six people, out of which three are from the General Category and three are form the Scheduled Caste category. Thus, you are in a group with five other people present in this session. You will not know who the five other people in your group are. The composition of your group of six remains the same until you are no longer in a group of six. In Quota-Tournament the winners are determined as follows:

- *If you belong to the Scheduled Caste category*: you are a winner and receive Rs. 30 for each correctly recalled number if you have a better Task 2 - performance than (i) the other two participants from the Scheduled Caste category in your group in Task 2, **or** (ii) at least four members of your group in Task 2. If you are not a winner, then you do not earn anything.
- *If you belong to the General category*: you receive Rs. 30 for each correctly recalled number if you have a better Task 2 - performance than (i) the other two participants from the General category in your group in Task 2, **and** (ii) four members of your group in Task 2. If you are not a winner, then you do not earn anything.

You will not be informed of how you did in the tournament until the end of the session. If there are ties, the winner will be randomly determined.

--Task 2 will start now. Please listen to the dictated numbers carefully and do not write anything before you are invited to do so. --

-- Now, please write down as many of the dictated numbers as you can recall in the next 3 minutes. --

-- Three minutes are over. Please stop writing immediately. --

*-- **Question 2.1**. Please indicate on your reporting sheet in the box in front of "Question 2.1" how many numbers out of those you have reported you think you have correctly recalled. If this task is selected for payment, you will receive an additional Rs. 50 if your prediction matches your actual score.*

***Question 2.2a**. Please indicate on your reporting sheet in the box in front of "Question 2.2a" which rank, between 1 and 6 you think you have got in Task 2, compared to the five other group members. A rank of 1 means you think you got the highest number of correct recalls in the group and rank 6 means you think you got the lowest number of correct recalls in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. –*

***Question 2.2b.** Please indicate on your reporting sheet in the box in front of "Question 2.2b" which rank, between 1 and 3 you think you have got in Task 2, compared to the three other group members of your own caste. A rank of 1 means you think you got the highest number of correct recalls within your own caste in your group and rank 3 means you think you got the lowest number of correct recalls within your caste in the group and similar for ranks between 1 and 3. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct.*

***Question 2.3**. Please indicate on your reporting sheet in the box in front of "Question 2.3" what is the*

chance that you will be among the "winners" in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the winners in your group of six, 100 if you are absolutely sure that you are among the winners, and some number in between 0 and 100 depending on how sure you are of being among the winners. The higher this number, the more confident you are in being among the winners. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the winners are. If you are interested in knowing how your bonus is calculated, ask us after the study is over.

Task 3. Choice

As in the previous two tasks, after listening to a series of 15 dictated numbers, you will be given 3 minutes to write down as many recalled numbers as possible. However, before that, you will get to choose which of the two previous payment modes you prefer to apply to your performance in Task 3. You can either choose to be paid according to the *piece rate*, or according to the *tournament*.

If Task 3 is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate* (i.e. the payment mode used in Task 1), you receive Rs. 10 per number correctly recalled.
- If you choose the *Quota-tournament*, your performance in **Task 3** will be evaluated relative to the performance of the other five participants of your group in the Task 2.
  * *If you belong to the Scheduled Caste category*: you receive Rs. 30 for each correctly recalled number if you are a winner i.e. you have a better Task 3-performance than (i) the other two participants from the Scheduled Caste category in your group in Task 2, **or** (ii) four members of your group in Task 2. If you are not a winner, then you do not earn anything.

  * *If you belong to the General category*: you receive Rs. 30 for each correctly recalled number if you are a winner i.e. you have a better Task 3- performance than (i) the other two participants from the General category in your group in Task 2, **and** (ii) four members of your group in Task 2. If you are not a winner, then you do not earn anything.

  You will not be informed of how you did in the tournament until the end of the session. If there are ties the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--Task 3 will start now.

Question 3.1. Please indicate on your reporting sheet which payment scheme you prefer to apply to your performance in Task 3. Strike through the option which you would not like to select and circle the option which you would like to select:

Example 1: If you want to be paid according to Piece rate and not according to Quota-Tournament, you should enter:

Piece rate

~~*Quota-Tournament*~~

Example 2: If you want to be according to Quota-Tournament and not according to Piece rate you should enter:

~~*Piece rate*~~

Quota-Tournament

Please select your payment option here:

3. *Piece rate*

4. *Quota-Tournament*

Now, please listen to the dictated numbers carefully and do not write anything before you are invited to do so. --

-- Now, please write down as many of the dictated numbers as you can recall in the next 3 minutes. --

-- Three minutes are over. Please stop writing immediately. --

***--Question 3.2**. Please indicate on your reporting sheet in the box in front of "Question 3.2" how many numbers out of those you have reported you think you have correctly recalled. If this task is selected for payment, you will receive an additional Rs. 50 if your prediction matches your actual score.*

***Question 3.3a**. Please indicate on your reporting sheet in the box in front of "Question 3.3a" which rank, between 1 for the highest number of correct recalls to 6 for the lowest number of correct recalls, you think you have got in Task 3, compared to the five other group members in Task 2. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question <u>even if</u> you have chosen the piece rate payment mode. –*

***Question 3.3b:** Please indicate on your reporting sheet in the box in front of "Question 3.3b" which rank, between 1 and 3 you think you have got in Task 2, compared to the three other group members of your own caste. A rank of 1 means you think you got the highest number of correct recalls within your own caste in your group and rank 3 means you think you got the lowest number of correct recalls within your caste in the group and similar for ranks between 1 and 3. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct.*

***Question 3.4.** Please indicate on your reporting sheet in the box in front of "Question 3.4" what is the chance that you will be among the "winners" <u>in your group of six</u> in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the winners <u>in your group of six</u>, 100 if you are absolutely sure that you are among the winners, and some number in between 0 and 100 depending on how sure you are of being among the winners. The higher this number, the more confident you are in being among the winners. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the winners are. If you are interested in knowing how your bonus is calculated, ask us after the study is over. We ask you to answer this question <u>even if</u> you have chosen the piece rate payment mode.*

Task 4A - Choice 2

In contrast to the previous tasks, you will not have to recall numbers for this Task. Instead you will be paid one more time for the numbers you recalled in **Task 1-Piece rate**. However, you will have to choose which payment mode you prefer to apply to your performance in **Task 1** (when you were paid Rs. 10 per number correctly recalled). You can either choose to be paid according to the *piece rate* or according to the *Quota-tournament*.

If Task 4A is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate*, you receive Rs. 10 per number correctly recalled in **Task 1**.
- If you choose the *Quota-tournament*, your performance in **Task 1** will be evaluated relative to the performance of the other five participants of your group in the Task 1.
  * *If you belong to the Scheduled Caste category*: you receive Rs. 30 for each correctly recalled number if you are a winner i.e. you have a better Task 1-performance than (i) the other two participants from the Scheduled Caste category in your group in Task 1, **or** (ii) at least four members of your group in Task 1. If you are not a winner, then you do not earn anything
- * *If you belong to the General category*: you receive Rs. 30 for each correctly recalled number if you are a winner i.e. you have a better Task 1- performance than (i) the other two participants

from the General category in your group in Task 1, **and** (ii) four members of your group in Task 1. If you are not a winner, then you do not earn anything

You will not be informed of how you did in the tournament until the end of the session. If there are ties, the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--Task 4A will start now.

Question 4A.1*. Please indicate on your reporting sheet which* payment scheme you prefer to apply to your performance in **Task 1** and strike through the option which you would not like to select and circle the option which you would like to select.

1. Piece rate

2. Quota-Tournament

Question 4A.2a*. Please indicate on your reporting sheet in the box in front of "Question 4A.2a" which rank, between 1 for the highest number of correct recalls to 6 for the lowest number of correct recalls, you think you have got in Task 1, compared to the five other group members in Task 1. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question even if you have chosen the piece rate payment mode. --*
Question 4A.2b*. Please indicate on your reporting sheet in the box in front of "Question 4A.2b" which rank, between 1 for the highest number of correct recalls to 3 for the lowest number of correct recalls, you think you have got in Task 1, compared to the two other group members from the same caste as you in Task 1. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question even if you have chosen the piece rate payment mode.*

Question 4A.3*. Please indicate on your reporting sheet in the box in front of "Question 4A.3" what is the chance that you will be among the "winners" in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the winners in your group of six, 100 if you are absolutely sure that you are among the winners, and some number in between 0 and 100 depending on how sure you are of being among the winners. The higher this number, the more confident you are in being among the winners. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the winners are. If you are interested in knowing how your bonus is calculated, ask us after the study is over. We ask you to answer this question even if you have chosen the piece rate payment mode.*

Task 4B. Choice 3

Like in Task 4A, you will not have to recall numbers for this Task and you will be paid one more time for the numbers you recalled in Task 1-Piece rate. You will again have to choose which payment mode you prefer to apply to your performance in **Task 1**. The only difference is that the rules for the tournament are now different. The two winners of the tournament are the two group members who had the highest scores in Task 1, *regardless of their caste*.

You can either choose to be paid according to the *piece rate* or according to the *tournament*.

If Task 4B is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate*, you receive Rs. 10 per number correctly recalled in **Task 1**.
- If you choose the *tournament*, your performance in **Task 1** will be evaluated relative to the performance of the other five participants of your group in the Task 1 –Piece rate. If you correctly recalled in Task 1 more numbers than four of your other group members in Task 1, then you are a "winner" and receive Rs. 30 for each number that you correctly recalled. You will receive no earnings for this task if you choose the tournament and are not among the two

"winners". You will not be informed of how you did in the tournament until the end of the session. If there are ties the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--*Task 4B will start now.*

Question 4B.1. *Please indicate on your reporting sheet which* payment scheme you prefer to apply to your performance in **Task 1**. Strike through the option which you would not like to select and circle the option which you would like to select.

1. *Piece rate*
2. *Tournament*

Question 4B.2a. *Please indicate on your reporting sheet in the box in front of "Question 4B.2a" which rank, between 1 for the highest number of correct recalls to 6 for the lowest number of correct recalls, you think you have got in Task 1, compared to the five other group members in Task 1. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question even if you have chosen the piece rate payment mode. –*

Question 4B.2b. *Please indicate on your reporting sheet in the box in front of "Question 4B.2b" which rank, between 1 for the highest number of correct recalls to 3 for the lowest number of correct recalls, you think you have got in Task 1, compared to the two other group members from the same caste as you in Task 1. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question even if you have chosen the piece rate payment mode.*

Question 4B.3. *Please indicate on your reporting sheet in the box in front of "Question 4B.3" what is the chance that you will be among the "winners" in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the winners in your group of six, 100 if you are absolutely sure that you are among the winners, and some number in between 0 and 100 depending on how sure you are of being among the winners. The higher this number, the more confident you are in being among the winners. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the winners are. If you are interested in knowing how your bonus is calculated, ask us after the study is over. We ask you to answer this question even if you have chosen the piece rate payment mode.*

Instruction for Treatment 3 (T3)

Task 1. Piece rate [Common for T0, T1, T2 and T3]

Task 2. PT-Tournament

As in Task 1, after listening to a series of 15 dictated numbers, you will be given 3 minutes to write down as many recalled numbers as possible (in the limit of 15). However, for this task your payment depends on your performance relative to that of a group of other participants through a method called ***PT-Tournament.***

Before proceeding, we explain the rules of ***PT-Tournament.***

Each group consists of six people, out of which three are from the General Category and three are form the Scheduled Caste category. Thus, you are in a group with five other people present in this session. You will not know who the five other people in your group are. The composition of your group of six remains the same until you are no longer in a group of six. In PT-Tournament the "winners" are determined as follows:

- *If you belong to the Scheduled Caste category*: your final score in the memory game will be your actual score plus 2. You are a "winner" and receive Rs. 30 for each correctly recalled number if you have a better Task 2 – final score than at least four other members of your group. If you are not a winner, then you do not earn anything.
- *If you belong to the General category*: your final score in the memory game is only your actual score. You are a "winner" and receive Rs. 30 for each correctly recalled number if you have a better Task 2- final score than at least four other members of your group. If you are not a winner, then you do not earn anything.

You will not be informed of how you did in the tournament until the end of the session. If there are ties, the winner will be randomly determined.

--Task 2 will start now. Please listen to the dictated numbers carefully and do not write anything before you are invited to do so. --

-- Now, please write down as many of the dictated numbers as you can recall in the next 3 minutes. --

-- Three minutes are over. Please stop writing immediately. --

Question 2.1*. Please indicate on your reporting sheet in the box in front of "Question 2.1" how many numbers out of those you have reported you think you have correctly recalled. If this task is selected for payment, you will receive an additional Rs. 50 if your prediction matches your actual score.*

Question 2.2a*. Please indicate on your reporting sheet in the box in front of "Question 2.2a" which rank, depending on your <u>actual score</u>, between 1 and 6 you think you have got in Task 2, compared to the five other group members. A rank of 1 means you think you got the highest actual score in the group and rank 6 means you think you got the lowest actual score in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct.*
–

Question 2.2b*. Please indicate on your reporting sheet in the box in front of "Question 2.2b" which rank, depending on your <u>final score</u>, between 1 and 6 you think you have got in Task 2, compared to the five other group members. A rank of 1 means you think you got the highest actual score in the group and rank 6 means you think you got the lowest actual score in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct.*
–

Question 2.2c*. Please indicate on your reporting sheet in the box in front of "Question 2.2c" which rank, depending on your <u>final score</u>, between 1 and 3 you think you have got in Task 2, compared to the two other group members of your caste. A rank of 1 means you think you got the highest actual score in*

the group and rank 6 means you think you got the lowest actual score in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. –

***Question 2.3**. Please indicate on your reporting sheet in the box in front of "Question 2.3" what is the chance that you will be among the top two, depending on your final score, in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two, 100 if you are absolutely sure that you are among the top two, and some number in between 0 and 100 depending on how sure you are of being among the top two. The higher this number, the more confident you are in being among the top two, depending on your final score. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the winners are. If you are interested in knowing how your bonus is calculated, ask us after the study is over.*

Task 3. Choice

As in the previous two tasks, after listening to a series of 15 dictated numbers, you will be given 3 minutes to write down as many recalled numbers as possible. However, before that, you will get to choose which of the two previous payment modes you prefer to apply to your performance in Task 3. You can either choose to be paid according to the *piece rate*, or according to the *PT-tournament*.

If Task 3 is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate* (i.e. the payment mode used in Task 1), you receive Rs. 10 per number correctly recalled.
- If you choose the *PT-tournament*, your final score in **Task 3** will be evaluated relative to the final scores of the other five participants of your group in the Task 3.
    - *If you belong to the Scheduled Caste category*: your final score in Task 3 will be your actual score plus 2. You are a "winner" and receive Rs. 30 for each correctly recalled number if you have a better Task 2 – final score than at least four other members of your group. If you are not a winner, then you do not earn anything.
    - *If you belong to the General category*: your final score in the memory game is only your actual score. You are a "winner" and receive Rs. 30 for each correctly recalled number if you have a better Task 3 - final score than at least four other members of your group. If you are not a winner, then you do not earn anything.

You will not be informed of how you did in the tournament until the end of the session. If there are ties the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--Task 3 will start now.

Question 3.1. Please indicate on your reporting sheet which payment scheme you prefer to apply to your performance in Task 3. Strike through the option which you would not like to select and circle the option which you would like to select:

Example 1: If you want to be paid according to Piece rate and not according to PT-Tournament, you should enter:

Piece rate

~~*PT-Tournament*~~

Example 2: If you want to be according to PT-Tournament and not according to Piece rate you should enter:

~~*Piece rate*~~

PT-Tournament

Please select your payment option here:

1. *Piece rate*
2. *PT-Tournament*

Now, please listen to the dictated numbers carefully and do not write anything before you are invited to do so. --

-- Now, please write down as many of the dictated numbers as you can recall in the next 3 minutes. --

-- Three minutes are over. Please stop writing immediately. --

***Question 3.2**. Please indicate on your reporting sheet in the box in front of "Question 3.2" how many numbers out of those you have reported you think you have correctly recalled. If this task is selected for payment, you will receive an additional Rs. 50 if your prediction matches your actual score.*

***Question 3.3a**. Please indicate on your reporting sheet in the box in front of "Question 3.3a" which rank, depending on your actual score, between 1 and 6 you think you have got in Task 2, compared to the five other group members. A rank of 1 means you think you got the highest actual score in the group and rank 6 means you think you got the lowest actual score in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct.*

***Question 3.3b**. Please indicate on your reporting sheet in the box in front of "Question 3.3b" which rank, depending on your final score, between 1 and 6 you think you have got in Task 3, compared to the five other group members. A rank of 1 means you think you got the highest actual score in the group and rank 6 means you think you got the lowest actual score in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. –*

***Question 3.3c**. Please indicate on your reporting sheet in the box in front of "Question 3.3c" which rank, depending on your final score, between 1 and 3 you think you have got in Task 2, compared to the two other group members of your caste. A rank of 1 means you think you got the highest actual score in the group and rank 6 means you think you got the lowest actual score in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. –*

***Question 3.4.** Please indicate on your reporting sheet in the box in front of "Question 2.3" what is the chance that you will be among the top two, depending on your final score, in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two, 100 if you are absolutely sure that you are among the top two, and some number in between 0 and 100 depending on how sure you are of being among the top two. The higher this number, the more confident you are in being among the top two, depending on your final score. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the winners are. If you are interested in knowing how your bonus is calculated, ask us after the study is over. We ask you to answer this question even if you have chosen the piece rate payment mode. --*

Task 4A - Choice 2

In contrast to the previous tasks, you will not have to recall numbers for this Task. Instead you will be paid one more time for the numbers you recalled in **Task 1-Piece rate**. However, you will have to choose which payment mode you prefer to apply to your performance in **Task 1** (when you were paid Rs. 10 per number correctly recalled). You can either choose to be paid according to the *piece rate* or according to the *PT-tournament*.

If Task 4A is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate*, you receive Rs. 10 per number correctly recalled in **Task 1**.
- If you choose the *PT-tournament*, your performance in **Task 1** will be evaluated relative to the performance of the other five participants of your group in the Task 1.
    - *If you belong to the Scheduled Caste category*: your final score will be your actual score in Task 1 plus 2. You are a winner and will receive Rs. 30 for each correctly recalled number if you have a better Task 1 – final score than at least four other members of your group. If you are not a winner, then you do not earn anything.
    - *If you belong to the General category*: your final score will be only your actual score in Task 1. You are a winner and will receive Rs. 30 for each correctly recalled number if you have a better Task 1 - final score than at least four other members of your group. If you are not a winner, then you do not earn anything.

  You will not be informed of how you did in the tournament until the end of the session. If there are ties, the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--Task 4A will start now.

Question 4A.1. *Please indicate on your reporting sheet which* payment scheme you prefer to apply to your performance in **Task 1** and strike through the option which you would not like to select and circle the option which you would like to select.

1. Piece rate

2. PT-Tournament

Question 4A.2a. *Please indicate on your reporting sheet in the box in front of "Question 4A.2a" which rank, depending on your actual score, between 1 and 6 you think you have got in Task 1, compared to the five other group members. A rank of 1 means you think you got the highest actual score in the group and rank 6 means you think you got the lowest actual score in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct.*

Question 4A.2b. *Please indicate on your reporting sheet in the box in front of "Question 4A.2b" which rank, depending on your final score, between 1 and 6 you think you have got in Task 1, compared to the five other group members. A rank of 1 means you think you got the highest actual score in the group and rank 6 means you think you got the lowest actual score in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct.*
–

Question 4A.2c. *Please indicate on your reporting sheet in the box in front of "Question 4A.2c" which rank, depending on your final score, between 1 and 3 you think you have got in Task 2, compared to the two other group members of your caste. A rank of 1 means you think you got the highest actual score in the group and rank 6 means you think you got the lowest actual score in the group and similar for ranks between 1 and 6. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct.*

Question 4A.3. *Please indicate on your reporting sheet in the box in front of "Question 4A.3" what is the chance that you will be among the top two, depending on your final score, in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two, 100 if you are absolutely sure that you are among the top two, and some number in between 0 and 100 depending on how sure you are of being among the top two. The higher this number, the more confident you are in being among the top two, depending on your final score. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful*

you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the winners are. If you are interested in knowing how your bonus is calculated, ask us after the study is over. We ask you to answer this question even if you have chosen the piece rate payment mode.

Task 4B. Choice 3

Like in Task 4A, you will not have to recall numbers for this Task and you will be paid one more time for the numbers you recalled in Task 1-Piece rate. You will again have to choose which payment mode you prefer to apply to your performance in **Task 1**. The only difference is that the rules for the tournament are now different. The two winners of the tournament are the two group members who had the highest scores in Task 1, *regardless of their caste*.

You can either choose to be paid according to the *piece rate* or according to the *tournament*.

If Task 4B is randomly selected for payment, then your earnings for this task are determined as follows.

- If you choose the *piece rate*, you receive Rs. 10 per number correctly recalled in **Task 1**.
- If you choose the *tournament*, your performance in **Task 1** will be evaluated relative to the performance of the other five participants of your group in the Task 1, based on your actual score. If you correctly recalled in Task 1 more numbers than four of your other group members in Task 1, then you receive Rs. 30 for each number that you correctly recalled. You will receive no earnings for this task if you choose the tournament and are not among the two top scorers. You will not be informed of how you did in the tournament until the end of the session. If there are ties the winner will be randomly determined.

If you have any question, please raise your hand and we will answer your question in private.

--Task 4B will start now.

***Question 4B.1**. Please indicate on your reporting sheet which* payment scheme you prefer to apply to your performance in **Task 1**. Strike through the option which you would not like to select and circle the option which you would like to select.

1. *Piece rate*
2. *Tournament*

***Question 4B.2a**. Please indicate on your reporting sheet in the box in front of "Question 4B.2a" which rank, between 1 for the highest number of correct recalls to 6 for the lowest number of correct recalls, you think you have got in Task 1, compared to the five other group members in Task 1. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question even if you have chosen the piece rate payment mode. –*

***Question 4B.2b.** Please indicate on your reporting sheet in the box in front of "Question 4B.2b" which rank, between 1 for the highest number of correct recalls to 3 for the lowest number of correct recalls, you think you have got in Task 1, compared to the two other group members of your own caste in Task 1. If this task is selected for payment, you will receive an additional Rs.50 if your guess is correct. We ask you to answer this question even if you have chosen the piece rate payment mode.*

***Question 4B.3**. Please indicate on your reporting sheet in the box in front of "Question 4B.3" what is the chance that you will be among the top two, depending on your score, in your group of six in this Task. Please indicate any number between 0 and 100, with 0 if you are absolutely sure you are not among the top two, 100 if you are absolutely sure that you are among the top two, and some number in between 0 and 100 depending on how sure you are of being among the top two. The higher this number, the more confident you are in being among the top two, depending on your final score. You will receive a maximum bonus of Rs.50 and a minimum bonus of 0 for answering this question. The more truthful you are in your report, the higher the bonus will be. In other words, your best interest is in truthfully reporting what you think your chances of being among the winners are. If you are interested in knowing*

how your bonus is calculated, ask us after the study is over. We ask you to answer this question even if you have chosen the piece rate payment mode.

Task 6 – Investment Task [Common for T0, T1, T2 and T3]

At the beginning of this Task you will receive Rs. 100. You are asked to choose how many Rs. (between 0 and 100) you wish to invest in a risky option. The amount that you do not invest is for you to keep.

We will toss a coin at the end of the session.

- If the coin comes up heads, your investment is a success. You earn 3 times the amount invested (plus the amount that you did not invest).

- If the coin comes up tails, your investment is a failure. You earn 0 and lose your investment (you keep only the amount that you did not invest).

Example 1. You invest nothing. The coin flip does not affect your earnings for this part. You get the Rs. 100 for sure.

Example 2. You invest all of the Rs. 100. If the coin comes up heads, you earn Rs. 300; if it comes up tails, you earn nothing and end up with 0 in this part.

Example 3. You invest Rs. 40. It the coin comes up heads, you earn 60 (the amount that you did not invest) + 3 x 40 (the mount you invested) = Rs.180. If the coin lands on tails, you earn Rs. 60 (the amount that you did not invest).

If you have any question, please raise your hand and we will answer your question in private.

Question 6.1 Please indicate on your reporting sheet how much you are willing to invest (between 0 and 100).

Exit Survey [Common T0, T1, T2 and T3]

Demographic questionnaire

Please answer the following questions. We remind you that your responses are anonymous.

1. What is your age _____years
2. What is your gender? Male / Female_____
3. Are you married? |___|Yes |___| No
4. Do you have children? |___| Yes |___| No
    a. If yes how many? _____
    b. How many of these children are under age 5?_____
5. Religion: • Hindu • Muslim • Others
6. If you have a religion, do you pray

    |___| several times per day |___| once per day |___| every week |___| rarely |___| never
7. Caste: • General • OBC • SC • ST • Others/No Caste
8. Education level:
    a. Class _____ (if passed Class 12 or below)
    b. Bachelors
    c. Masters or above
9. Gross Monthly Family Income (before tax): Rs. _____

10. If you compare your family's economic conditions to the others in your village, your family is (tick as appropriate):

___ very poor, ___poor, ___average, ___rich, ___very rich

11. Employment status:
12. No. of years of employment in total
13. No. of years of employment in current job
14. Does your family own a TV? |___| 1=yes, 2=no
15. Does your family own a motorbike or car |___| 1=yes, 2=no.
16. Does your family own a bicycle? |___| 1=yes, 2=no

Risk attitudes

Please answer the following questions. Are you a person who is fully prepared to take risks or do you try to avoid taking risks in the following situations?

Please tick the circle that describes you the best on the following scale, where the value 0 means: 'not at all willing to take risks' and the value 10 means: 'very willing to take risks'.

17. In general

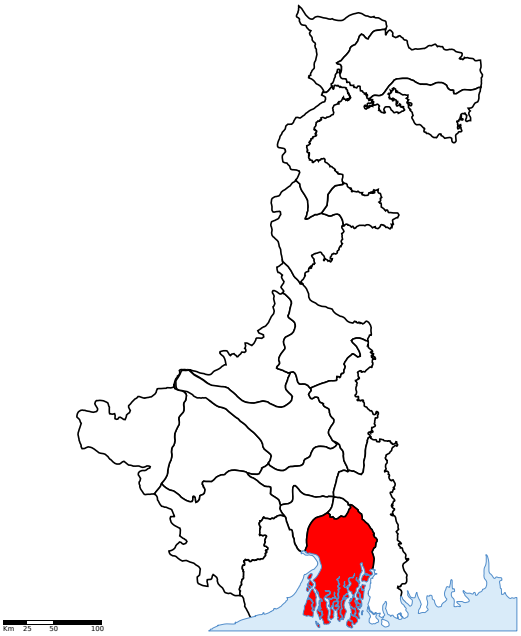
18. When it comes to financial matters?

19. When it comes to health matters?

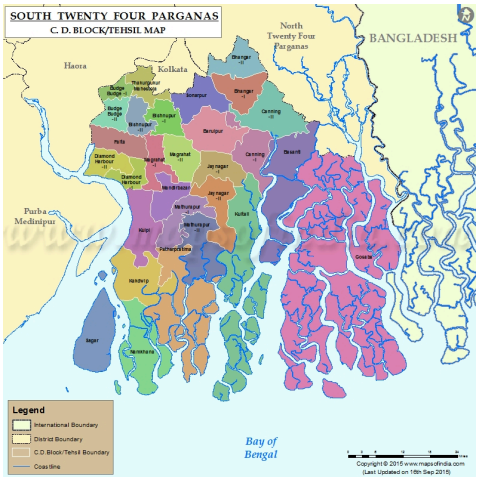
Appendix 2. Experimental sites: West Bengal and South 24 Paraganas

(a) West Bengal

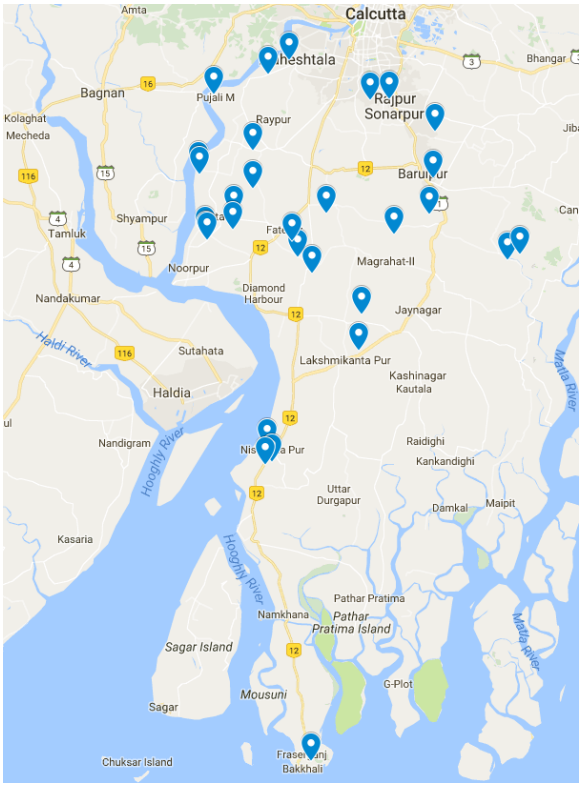
(b) South 24 Paraganas



(c) Blocks within South 24 Paraganas



(d) Sampled Villages and Wards



Appendix 3. Summary statistics on the subject-pool

	T0	T1	T2	T3	Diff. (T1-T0)	Diff. (T2-T0)	Diff. (T3-T0)
Female	0.48	0.48	0.44	0.44	0.00 (0.91)	0.04 (0.51)	0.04 (0.51)
Caste[a]	87, 3, 77, 1	85, 1, 79, 3	81, 4, 82, 1	88, 0, 80, 0	-	-	-
SC[b]	0.48	0.49	0.52	0.48	0.01 (0.83)	0.03 (0.51)	0.00 (0.91)
Risk	41.46	40.86	37.91	39.23	0.30 (0.56)	3.55 (0.66)	2.23 (0.56)
Age	21.86	20.38	21.04	21.83	1.49 (<0.01)	0.82 (0.14)	0.03 (0.91)
Education[c]	12.40	11.98	12.59	12.33	0.42 (0.15)	0.19 (0.31)	0.35 (0.96)
Log(Family Income)	8.48	8.43	8.50	8.63	-0.05 (0.27)	0.02 (0.99)	-0.15 (0.10)

Notes: The Table report mean values. Diff. denote the treatment differences. The numbers in parentheses denote *p*-values reported from Mann-Whitney rank sum tests. [a]: Caste data is presented as General, OBC, SC, ST. [b]: SC is equal to 1 if a subject is either OBC, SC or ST, and 0 otherwise. [c]: Years of education completed

Appendix 4. Pictures of some experimental sessions

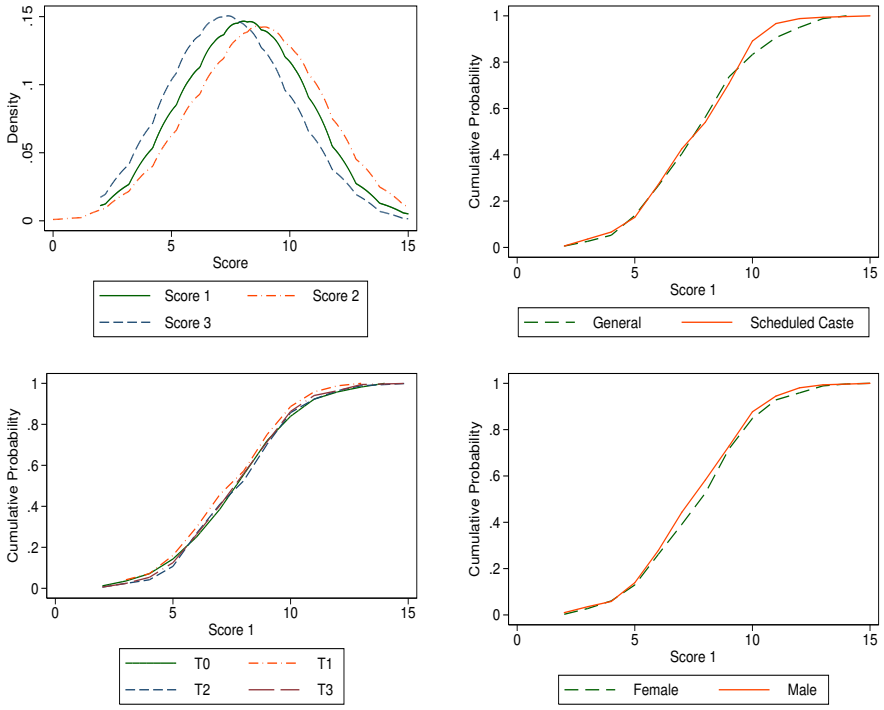
(a)

(b)

(c)

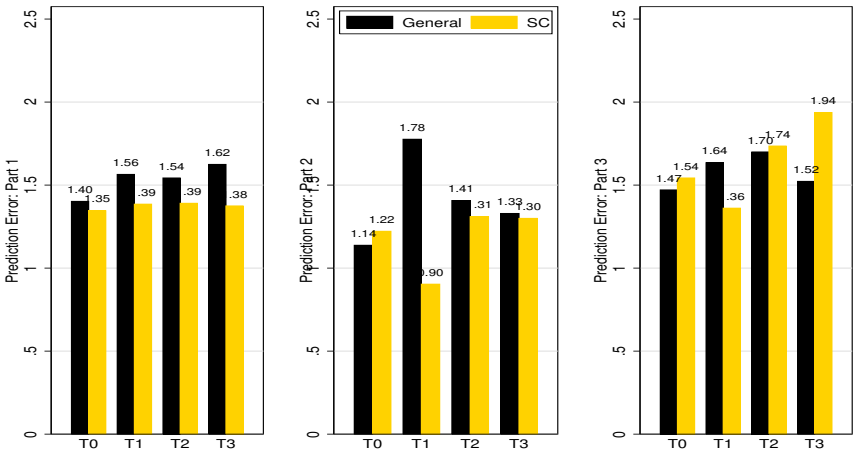
Appendix 5.

Figure 1A: Distribution of scores in the memory task



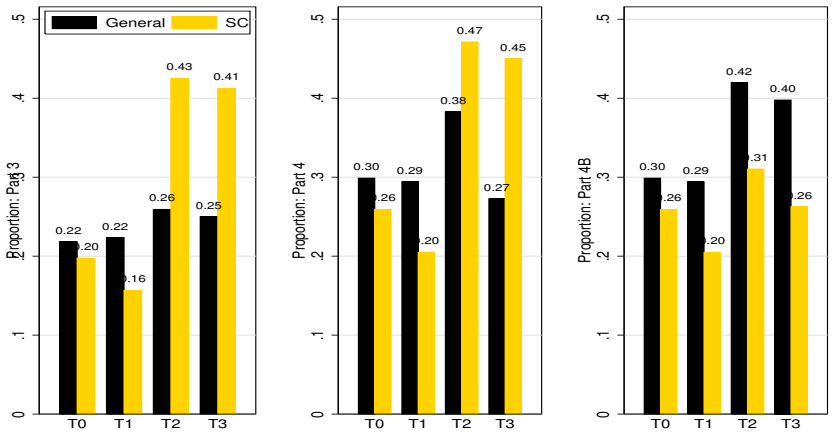
Notes: The top left panel plots the distribution of the scores obtained in parts 1, 2 and 3, namely score1, score2 and score3. The mean scores are 8.01, 8.63 and 7.42, respectively. The figure in the top right panel compares score in part 1 across castes. The mean score in part 1 is 8.12 for the GC subjects and 7.98 for the SC subjects (*t*-test, p=0.40). The figure in the bottom right panel compares scores across gender. Mean score in part 1 is 8.16 for males and 7.93 for females (*t*-test, p=0.30). The figure in the bottom left panel plots the distribution of scores in part 1 for each treatment. Score in part 1 does not vary either between T1 and T0 (*t*-test, p=0.34), or T2 and T0 (*t*-test, p=0.84), or T3 and T0 (*t*-test, p=0.93). All standard errors are clustered at the village level. We rely only on score in part 1 to illustrate balance across treatments since treatments can potentially affect scores in subsequent parts.

Figure 2A: Absolute self-confidence: prediction error



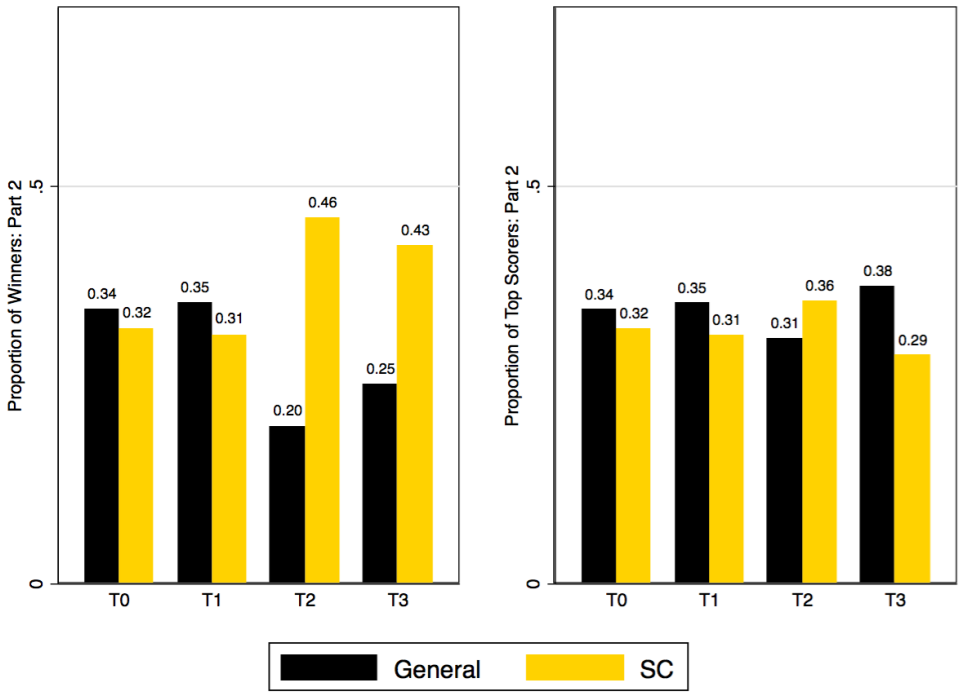
In part 1, the difference in prediction error between General and SC in T0 is 0.05 (t-test,p-value=0.85), in T1 is 0.18 (t-test,p-value=0.62), in T2 is 0.15 (t-test,p-value=0.67), in T3 is 0.25 (t-test,p-value=0.41). All standard errors are clustered at the village level. The corresponding tests for part 2 and 3 are given in Table 3.

Figure 3A: Relative self-confidence: prediction error about being a winner



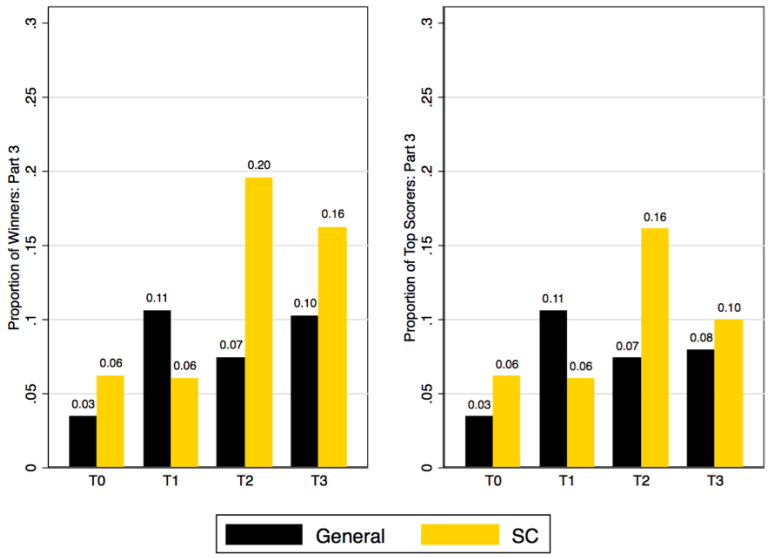
The proportion of subjects who predict they will be among the winners is given in y-axis. That proportion increases for the SC in the presence of AA policy, as is clear from the figure in the left and middle. However, as the right hand side figure shows, when the AA policy is removed, the proportion of SC who believe they will be among the winners decreases.

Figure 4A: Comparison of actual winners and top scorers in Part 2



Note: The figure on the left plots the proportion of actual winners in Stage 2. The figure on the right plots the proportion of top scorers in Stage 2. In T0 and T1, winners are the top scorers but in T2 and T3 that is not necessarily the case.

Figure 5A: Comparison of actual winners and top scorers in Part 3



Note: The figure on the left plots the proportion of actual winners who chose tournament in Stage 3. The figure on the right plots the proportion of the top scorers who chose tournament in Stage 3. In T0 and T1, winners are the top scorers but in T2 and T3 that is not necessarily the case.

Table A1. Determinants of tournament choice in part 4B

	(1)	(2)	(3)	(4)
Step 2: Dep. Variable: Tournament choice in part 4B				
Predicted belief on being a winner	0.58***	0.62***	-	-
	(0.09)	(0.09)		
Predicted belief on chance of winning	-	-	0.01***	0.01***
			(<0.001)	(<0.001)
Socio-demographic variables	*No*	*Yes*	*No*	*Yes*
Step 1: Dep. Variable:	*Belief on being a winner in part 4B*		*Belief on chance of winning in part 4B*	
Scheduled Caste subjects (SC)	-0.04	-0.06	0.96	-0.22
	(0.06)	(0.06)	(2.98)	(2.91)
Treatment T1	0.01	0.01	2.15	2.52
	(0.09)	(0.08)	(4.15)	(4.21)
Treatment T2	0.09	0.09	2.31	2.16
	(0.07)	(0.07)	(3.71)	(4.02)
Treatment T3	0.09	0.08	3.01	2.22
	(0.06)	(0.06)	(3.35)	(3.65)
SC*T1	-0.05	-0.04	-6.34	-5.72
	(0.11)	(0.10)	(6.21)	(5.89)
SC*T2	-0.05	-0.04	-2.39	-1.42
	(0.08)	(0.08)	(4.40)	(4.23)
SC*T3	-0.08	-0.06	-5.47	-3.65
	(0.10)	(0.09)	(4.42)	(4.07)
Score in part 2	0.05***	0.04***	3.11***	2.50***
	(0.01)	(0.01)	(0.53)	(0.50)
Socio-demographic variables	*No*	*Yes*	No	Yes
Number of observations	672	669	672	669
Log pseudo-likelihood	-730.27	-713.9	-3374.23	-3325.78
Prob>chi2	<0.001	<0.001	<0.001	<0.001

Notes: Clustered standard errors at the village level are in parentheses. The four columns report marginal effects. In the first step estimation, the dependent variable in columns (1) and (2) is the belief that the subject will be among the winners in part 4B; the dependent variable in columns (3) and (4) is the belief about the chance of winning in part 4B. In the second step, a probit model estimates the probability to choose the tournament in part 4B. T0 and T1 did not have part 4B, so data from part 4 is used. ***, **, and * indicate significance at the 0.01, 0.05, and 0.1 level, respectively.