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## Dishonesty concessions in teams

Theory and experimental insights from local politicians in India

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**Abstract:** Economic theory predicts that dishonesty thrives in secrecy. Yet, team-based decisions are ubiquitous in public policy-making. How does teamwork influence the tendency for self-dealings when public servants—both honest and corrupt—must work together to make decisions under the veil of within-group secrecy? This paper designs a field experiment guided by a theoretical model of team-level dishonesty, where we define and unpack the drivers of the dishonesty concessions that individuals make in a team setting as a cooperative bargain between team players. The experiment is implemented in a sample of village council (Gram Panchayat) members in the State of West Bengal in India, extending the die roll experiment à *la* Fischbacher and Föllmi-Heusi (2013). By bringing together evidence pointing to the distinctive contributions of peer dishonesty influence, social image concerns (e.g. as a gender- and seniority-based marker), and power asymmetry effects (e.g. between politicians in reserved and openly contested seats) in guiding the dishonesty concessions individuals choose to make in a team, our findings shed light on the salience and nuanced role of committee composition in teams of public officials.

**Key words:** politician dishonesty, peer effects, social image, power asymmetry

JEL classification: D9, O12, K42

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#### 1 Introduction

In governments and civil service organizations alike, public servants of virtuous characters serve alongside individuals more prone to engage in corruption (Besley 2005; Prendergast 2007). Given these individual proclivities, and among the corruptibles, economic theory predicts that corruption tends to thrive in secrecy, when individual benefits are more likely to exceed perceived costs (Becker 1968; Rose-Ackerman 1975; Shleifer and Vishny 1993; Banerjee 1997; Aidt 2003; Olken and Pande 2012; Banerjee et al. 2012). What has remained poorly understood in this vast literature regarding the roots of corruption is how the incidence and severity of corruption can change when honest and corrupt public servants work together in teams to make decisions under the veil of within-group secrecy. Does team composition matter in safeguarding the delivery of truth for given financial gains associated with lying? How do ethical, psychological and power differences between members affect team-based self-dealings? In this paper, we conduct a field experiment in which we gauge the mechanisms that moderate the tendency for team-based dishonesty among local government leaders. Our objectives are to explore three potential mechanisms, and specifically whether an individual's tolerance for dishonesty in a group-based rather than individual setting, henceforth the dishonesty concession, depend on (i) peer effects—other group members are dishonest; (ii) social image concerns other group members are present; and (iii) power differences—other group members are persuasive / influential.

Political scholars have long been interested in how a politician's peers affect decision-making, where exposures to peer influence take the form of seating proximity in parliament on vote similarity (Fisman et al. 2015; Saia 2018), for example. Studies have also investigated peer effects working through office proximity on voting and bill co-sponsorship (Rogowski and Sinclair 2012), socialization and legislative histories on career advancements (Canen and Trebbi 2016), as well as alumni networks on logrolling and political contributions (Cohen and Malloy 2014; Battaglini and Patacchini 2018).

While offering many helpful insights, these studies do not directly address how dishonest team behavior protected under plausible deniability can arise depending on team member composition. Yet, team-based decisions are ubiquitous in public policy-making. Government committees and legislative bodies draft bills, handle sensitive information, serve as watchdogs of the executive, and adjudicate wrongdoings. Furthermore, elaborate committee-specific rules typically exist to guide the selection of committee members, including whether they are to be elected or nominated, serving single or multiple terms, and whether specific eligibility and

<sup>&</sup>lt;sup>1</sup> An emerging body of research points out that group decisions differ from individual decisions. In particular, studies have shown that groups may be less susceptible to behavioral biases than single individuals (Kugler et al. 2007; Charness and Sutter 2012)

membership quotas apply (Congressional Research Service 2006). Our study contributes to this hitherto understudied area of public policy making using a field experimental approach to generate variations in team member composition. We do so in a setting where public servants are given the opportunity to provide a team-level response to a dishonesty elicitation game using die rolls (Fischbacher and Föllmi-Heusi 2013).

The original die game  $\grave{a}$  la Fischbacher and Föllmi-Heusi (2013) is played by individuals. The game provides an individual-level indicator that serves as a proxy for the tendency to engage in dishonest behavior. The idea is simple and elegant. In the version we adopt, each participant is asked to roll a die N times in private. The participant is then asked to report the number times a particular die number, say x, is cast. The higher the reported number of reported x's, the higher will be a player's monetary payoff. Since the experiment is done in private, any die roll count weakly less than N, whether realized or not, is probable. Importantly, while no one other than the participant knows with absolute certainty whether a reported number of x is true, the die roll report provides a sufficient statistic for the likelihood that the respondent has lied.

The die roll experiment has been used extensively to study the propensity for dishonest behavior. In terms of relevance and external validity, the results of die roll experiments have been shown to be correlated with personalities (Gino and Ariely 2012; Hilbig and Zettler 2015), public service motivations (Barfort et al. 2019; Olsen et al. 2019), and actual dishonest acts, offences against law enforcement, or corruption-like behavior such as absenteeism (Cohn et al. 2015; Cohn and Maréchal 2018; Hanna and Wang 2017).

To this growing literature, the contributions of this paper methodologically are two-fold. We introduce a two-stage design to implement the canonically lab-based die game in the field. In the first stage, we ask individual participants to play the die game on their own. We use the reported first-stage die counts both as a proxy for individual-level dishonesty in our empirical analysis, and also as a metric for screening participants to form teams of two to play the die game in the second stage. In so doing, we generate exogenous and balanced group-level variations in individual dishonesty pairings as in the lab-based study in Kocher et al. (2018), along with variations in other characteristics, such as gender, and age. In the team die game, in order to mimic committee decisions rather than individual decisions, we adopt payoff incentives that encourage participants to have a collective mindset, by assigning each payer the same monetary payoffs depending only on the team die roll report.

Second, we theoretically model the decision-problem of the team in order to guide our empirical inquiry. We model the negotiation between the members of the team as a Nash bargaining problem. Thus we posit a negotiation outcome that satisfies the well-known axiomatic

problems of the Nash bargaining solution.<sup>2</sup> The Nash bargaining problem has the additional advantage that the bargaining strength of a player already features prominently as part of the bargaining outcome.

For team member preferences, we write a utility function that showcases the interplay between the monetary gains and the personal psychological (self-image) cost of dishonesty. While the cost of dishonesty is naturally player-specific and unknown to the researcher, we show that the outcome of the first stage individual die roll game provides a sufficient statistic that captures the strength of the psychological cost of dishonesty for each participant. Moving from individualto team-die games, we furthermore bring together lessons from studies showing that decisionmaking outcomes depend critically on the social environment in which decisions take place (Bursztyn and Jensen 2017). In particular, since lying in team games involves a within-group display of tolerance to dishonesty, social image concerns (e.g., Bénabou and Tirole 2006; Akerlof and Kranton 2000, 2005), if at play, may guide an individual to behave differently than when dishonesty takes place in total secrecy in the individual game setting. Indeed, research has shown that the identity a person adopts is context-dependent (Charness and Chen 2020). A priori, therefore, the direction of the social image effect may go either way, for while a within-team display of dishonesty may be unpalatable for some, others might find having a team member to serve as a scapegoat to be an antidote to any psychological guilt associated with self-dealing (e.g., Charness et al. 2019; Kocher et al. 2018).

Our theory generates a simple closed form solution that showcase how peer effects, social image concerns, and power dynamics jointly determine the level of team dishonesty given the individual-specific ethical cost of lying. First, the presence of peer effect is a property of the Nash bargain—the more corrupt is one's partner team member, the more a team member will tolerate a more corrupt team outcome relative to her own ideal position. The only exception being a fully incorruptible individual, for whom no amount of team dishonesty will be tolerated, and, will be seen as a deal breaker. Second, controlling for participant indifference to dishonesty exhibited in the first stage individual game, the Nash bargaining outcome for the team should not vary systematically with other personal characteristics, unless such characteristics are associated with social image concerns. These concerns compel a player to adjust their indifference to dishonesty when such decisions are made in public. Finally, a more influential participant will tilt the team outcome to a level closer to her ideal position, which may reinforce or reduce team-level dishonesty depending the configuration of the levels of indifference to dishonesty between the more and less influential individual.

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<sup>&</sup>lt;sup>2</sup> These include: Pareto optimality, individually rationality, independent of expected utility representations, independent of irrelevant alternatives, and symmetry.

Motivated by these observations, we empirically test the salience of peer effects, social image concerns and power asymmetry on team dishonesty. In particular, for each participant, we construct a variable henceforth referred to as 'dishonesty concession'—the difference between the team die roll count in the second stage and the individual die roll count in the first stage—as a proxy for the change in tolerance to dishonesty going from individual- to team-based decision-making. We say that peer effects are present if dishonesty concession rises with a team partner's indifference to dishonesty demonstrated independently in the first stage before the pair games. Meanwhile, we interpret individual characteristics that give rise to a change in dishonesty concessions, after controlling for each participant's individual indifference to dishonesty (assessed in the first stage), as suggestive evidence of individual characteristics that are associated with social image concerns. Finally, in order to assess the role of power asymmetry, we look at a number of interactions, motivated by theory. Specifically, we construct pair-specific power difference variables (e.g age gap, gender gap, openly elected or reserved seats, religious and caste differences) and interact these with the corresponding gap in the participants indifference to dishonesty in the first stage.

To work with an experimental setting as close as possible to real world policy-making, and where plentiful market imperfections enables corruption to thrive (Banerjee 1997), we conduct the experiment with local government leaders in a developing country, India. Within the government hierarchy, we choose to implement our experiment at the level of the local village council. Within the Indian context, there is by now a large volume of work showing the salience and impact of corruption at this level of government.<sup>3</sup> In total, 111 village council members (Panchayat members) from 10 Gram Panchayats (village councils), henceforth GPs, in the state of West Bengal participated in the experiment and fully completed a respondent survey.

We visited each of the 10 GPs to implement the two-stage (individual- and pair-die game) protocol. The statistical expectation of the number of times a 6 should appear after 18 die rolls is  $3 (= 18 \times (1/6))$ . In the individual die games, after 18 requested die rolls, the participants reported that on average a 6 appears 3.6 times. In the pair games, the pairs reported that on average 6 appears 3.4 times. This implies a level of dishonesty concession equaling -0.2 (= 3.4-3.6) on average. Thus, individual dishonesty on average exceeds group dishonesty.

We then estimate the determinants of the dishonesty concession using both OLS as well as Poisson regressions with fixed effects and clustered standard errors at the GP level. Several findings are salient and consistent in both the OLS and the Poisson regressions. Specifically,

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<sup>&</sup>lt;sup>3</sup> Corruption by local village council members has been shown to bias the allocation public goods (Besley et al. 2012), and publicly-funded jobs (Jeong et al. 2022). Varying the presentation of village council members has been shown to significant alter the effectiveness of public investments such as drinking water, roads, health and education Iyer et al. (2012); Bhalotra and Clots-Figueras (2014); Bardhan et al. (2010); Bardhan and Mookherjee (2023).

we find strong evidence of peer effects—an individual's dishonesty concession going from individual to a group setting is strongly and positively associated with higher dishonesty of the team member. In particular, a unit increase in the number of 6's reported by participant's peer member in the team increases the individual's dishonesty concession by 0.116 to 0.242 across different specifications that include peer, social image and power asymmetry effects. Since the Nash bargaining solution is nonlinear, we also check to see if these results hold in a nonparametric quantile regression setting. We find the results to hold well for levels of dishonesty concessions away from the extremes, and between 30 and 70 percentiles.

We consider a list of different personal characteristics that may be associated with social image concerns. We included both observable and plausibly common knowledge characteristics at the time of the experiment, as well as characteristics that may be less well known as potential social image concerns contributors. These included (i) demographic controls such as the gender, age and caste of the participant; (ii) political status controls such as whether the seat currently occupied is a reserved seat for under-represented castes or an uncontested seat with no other person running for the position, and (iii) economic status controls such as the level of education and earnings.

Of these correlates, we find that being male appears to be a marker negatively associated with dishonesty concession—male participants tend to scale down their die reports in a group setting compared to what they would have selected in full secrecy. This provides suggestive evidence of gender-based differences in social image concerns. Having two males in the group, however, removes the dishonesty concession effect, rendering a pair of male participants no different than other gender composition types. These results speaks to a growing literature on the role of gender and corruption (e.g., Barnes and Beaulieu 2019; Muehlheusser et al. 2015), and importantly adds gender-composition effects on dishonesty in teams as a novel observation (e.g., Decarolis et al. 2023; Abeler et al. 2014; Conrads et al. 2013; Childs 2012; Dreber and Johannesson 2008; Dufwenberg and Muren 2006; Chaudhuri et al. 2024). Interestingly, while the literature has so far given little attention to the role of seniority as team-lying trigger,<sup>4</sup> in our study we find that in teams where both participants are junior (less than the average age of 45 years), there is also a tendency for a scaling down of the team die reports relative to individual die reports. The observation that lying decreases in teams of junior participants is again consistent with the role of social image concerns driven by reputation-building in teamwork – junior participants who have not had as many opportunities to interact with one another stand to gain most from demonstrating honesty.

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<sup>&</sup>lt;sup>4</sup> Interestingly, Chaudhuri et al. (2024) finds that inexperienced female politicians in India are more honest in individual die roll experiments, although the gender gap dissipates with experience. By contrast, we explore these gender- and experience related drivers of dishonesty in a team environment.

Turning to power asymmetry effects, we enlist power asymmetry correlates from a number of different lenses. In particular, we include only observable and plausibly common knowledge characteristics for the simple reason that unknown characteristics are by definition unable to create changes in power perceptions. Thus we include power asymmetry related to (i) demographics (male (own) vs. female (other), older than (own) vs younger than (other)); (ii) political status (reserved seat (own) vs. not reserved seat (other), majority political party (own) vs. minority political party (other)); (iii) economic status (more educated (own) vs. less educated (other)); (iv) religious majority status (Hindu (own) vs. Muslim (other)); and (v) caste-based status (General Caste (own) vs. Other Backward Caste, Scheduled Castes and Scheduled Tribes (other)).

Motivated by theory, we then interact these power asymmetry metrics with the difference between a player and her peer's individual level of dishonesty assessed in the first stage individual experiment. Power asymmetry effect consistent with a change in bargaining strength in the Nash bargain, according to our theory, would imply that the interacted term has a statistically significant effect on the dishonesty concession. We find that having a reserved seat is strongly and negatively associated with power influence over the level of dishonesty concession one makes. In other words, individuals holding reserved seats are less able to impose their dishonesty preference on their peer in the group experiment. We emphasize that individuals with reserved seats do not show up as having a social image concern. Only after interacting with the difference in pair-level dishonesty metrics does the reserved seat effect emerge. This finding echoes earlier works of Bhavnani (2009) and Jensenius (2017) showing that GP members occupying reserved seats have low likelihoods of getting re-elected in an open contest when the quota no longer applies, suggesting therefore that on average, GP members in reserved seats may be viewed as having lower political standing than individuals who won openly contested seats.

Other power proxies also appear to be salient drivers, showing consistent signs but statistical significance in only some of the specifications. Particularly notable and intuitive power asymmetry proxies include the role of religion-based and caste-based power. In both cases, we find that religious majority and higher caste members show greater influence on team outcomes. These individuals elicited larger dishonesty concession from the other member, making them agree to a team outcome more closely aligned with one's own preference. The effects of these

<sup>&</sup>lt;sup>5</sup> In the Nadia district of the state of West Bengal at the time of our experiment, the All India Trinamool Congress (AITC) is the majority political party. The minority parties include the Bharatiya Janata Party (BJP), the Indian National Congress (INC), and other independents (IND).

<sup>&</sup>lt;sup>6</sup> Thus, we eliminated earnings comparison as a power asymmetry variable. Including it does not change our result, however.

power asymmetry drivers are no longer apparent, however, when reserve seat-based power control is included in the regression.

When information that are unknown to third parties enable dishonesty to thrive without impunity, a natural tendency is to rely on multiple pairs of eyes to foster honesty in decision-making. Notwithstanding this tendency, we find that dishonesty can thrive in team settings, and furthermore, our findings provide a new lens into the simultaneous contributions of three effects in driving the dishonesty concessions individuals choose to make in a team-based setting, via peer dishonesty influences, social image concerns and power-asymmetry between team members.

#### 2 Related literature

This paper speaks to a fast-growing literature on both the theory and empirical evidence on the determinants of dishonesty. Extending studies of the determinants of lying at the individual level (e.g., Kartik 2009; Gneezy et al. 2018; Kajackaite and Gneezy 2017; Abeler et al. 2019) which explore the self-image and strategic contributors to lying depending on whether the cost of lying depends on the size of the lie and the perception associated with any potential self-dealing, this paper examines team-level dishonesty under plausible deniability as a negotiation outcome between individuals with potentially different attitudes about lying. We incorporate a typical utility function accounting for lying cost in a Nash bargaining problem, and show that the Nash solution presents three types of team dynamics hitherto underappreciated in understanding team-based public policy making: peer effects, social image concerns, and power asymmetry. We then empirically test the salience of these factors by adding a pair-stage to the canonical die roll experiment (Fischbacher and Föllmi-Heusi 2013), so that both individual-level indifference to dishonesty can be captured in the first stage, and exogenously varied across teams in the second stage.

Closely related to our work, Chaudhuri et al. (2024) examines dishonesty among Indian local politicians in the State of West Bengal using the die roll experiment and finds that young and inexperienced female village council members report a lower die count. Chaudhuri et al. (2024) explores for the first time the root of this gender- and experience-related marker of dishonesty and shows that having family political connections and having received help in political work can contribute to a disappearing gender gap in dishonesty tendencies over time. By contrast, our focus in this study is the team interaction between politicians with different tendencies for dishonesty. Our complementary findings likewise highlight the role of gender and seniority by showing that the juxtaposition of these characteristics among team members can drive variations in dishonesty concessions through social image concerns, after a politician's own dis-

honesty tendency is controlled for. Furthermore, we also find that the standing of a politician in terms of the reserve-status of the occupied seat matter as a power asymmetry marker.

There is also a growing literature on dishonesty in teams (e.g., Gneezy 2005; Gino et al. 2013; Conrads et al. 2013; Weisel and Shalvi 2015; Kocher et al. 2018). The literature highlights the tension between two mechanisms with opposing effects on the distance between individual and group dishonesty. First, dishonesty may increase in a team setting, when individuals find it easier to scapegoat other team members as responsible for the dishonest act committed on behalf of the group (e.g., Conrads et al. 2013; Weisel and Shalvi 2015). This tendency is heightened by better communication (Kocher et al. 2018), and when the benefits of lying is more evenly shared allowing individuals to adopt a collective mindset (Conrads et al. 2013; Gino et al. 2013; Sutter 2009; Gneezy 2005). Operating in opposite direction, dishonesty may decrease in a team setting when individuals are prone to social-image concerns when a dishonest act is committed in front of others in the team (e.g., Bénabou and Tirole 2006; Akerlof and Kranton 2000, 2005). In particular, when reputation for honesty is important and must be earned, individuals may limit the level of dishonesty displayed in a team setting. On balance, studies to date have relied on lab-based settings where encounters between team members socially and professionally unaffiliated with each other are one-shot. The main findings so far indeed suggest that lying in a team setting does tend to outstrip lying as an individual (e.g., Kocher et al. 2018; Conrads et al. 2013; Weisel and Shalvi 2015; Gino et al. 2013), and in particular with more lying occurring in male groups than female groups (e.g., Muehlheusser et al. 2015; Abeler et al. 2014; Conrads et al. 2013; Childs 2012; Dreber and Johannesson 2008; Dufwenberg and Muren 2006; Chaudhuri et al. 2024).

In our study, we depart from the lab experimental setup, and work with local government leaders in their own districts. Thus, members of teams (i) already knew each other before the team activity takes place and (ii) will continue to interact with each other after the team work is over. We do so in order to construct teams more closely aligned with real world policy making settings, in which government leaders interact based on information about observed behavior in the past, and make decisions with the understanding that reputation is built one act at a time. We find that this setting generates a number of findings that are contrary to existing lab-based experimental findings. In particular, we find that in the raw data in our setting, partial lies are the norm. In addition, the distribution of team die reports is less dispersed than individual die reports, with a slightly lower mean. Thus, for the groups of local government leader participants in our study, the tendency is for team dishonesty to decrease rather than increase consistent with the relative predominance of social image concern and reputation building.

This paper delves into three separate mechanisms that drive team behavior. The first concerns peer effects (e.g., Boucher et al. 2024; Bramoullé et al. 2020), and in particular among political leaders and government officials. For example, Harmon et al. (2019) finds that voting

disagreement is less likely between Parliament members that sit, or have sat, next to each other. Accounting for selection-into-committee characteristics among politicians, Berry and Fowler (2018) finds evidence showing that committee chairs have more influence than members in congressional committees in terms of legislative effectiveness, and judging from campaign contributions. Contrary to these studies that focus on the role of peer effects on job-defined decision-making by political leaders, such as voting on a legislation, our study explores how peer effects among politicians can impact team dishonesty, after each participant has been primed in the first stage to acknowledge their own individual propensity to deviate from the truth. Doing so allows us to test the peer effect prediction of our model, namely, that the dishonesty concession that each individual team member makes depend differentially on the characteristics of both themselves, and the peer team members they are matched with.

This paper also connects with studies related to the social psychology of self-image and social-image concerns as a driver of team behavior. In particular, self-image concerns compel individuals to safeguard a moral character through choices that may be monetarily costly, but ethically righteous. Such concerns are consistent with a psychological (intrinsic) cost of lying per se, and/or an aversion to lying that may increasing in the size of the lie (e.g., Kajackaite and Gneezy 2017; Abeler et al. 2019). By contrast, social-image concerns compel an individual to maintain a reputation for being moral and righteous (e.g., Akerlof 1983; Bénabou and Tirole 2006; Andreoni and Bernheim 2009; Fischbacher and Föllmi-Heusi 2013). A large body of theoretical and empirical studies have been devoted to determining whether, and if so how such social image concerns may manifest in different settings (e.g., Dufwenberg and Dufwenberg 2018; Abeler et al. 2019; Fries et al. 2021), depending on whether a dishonest act is observed, and whether particular departures from the truth can be seen as more unlikely, and thus more likely a lie when stated (e.g., Gneezy et al. 2018; Khalmetski and Sliwka 2019; Basic and Quercia 2022).

Notably, these studies of social image concerns presuppose that the observer of an dishonest act inherently possesses a preference for honesty. This paper sheds light on the salience of social image concerns in a team setting where the observer of an dishonest act can also choose to participate in and benefit from the act. We ask, do individuals continue to demonstrate a desire for a reputation of honesty when the observer of the dishonest act can also partake in the benefit of the lie? Furthermore, are there particular personal characteristics for whom

<sup>&</sup>lt;sup>7</sup> There are many other studies that explore the role of peer effects and networks on political outcomes, including Masket (2008) on desk adjacency and voting, Canen and Trebbi (2016) on socialization and political careers, Battaglini and Patacchini (2018) on social networks and political contributions, and Cohen and Malloy (2014) on alumni network and vote trading, for example).

<sup>&</sup>lt;sup>8</sup> By separatingly accounting for own-dishonesty and peer-dishonesty effects, we depart from one particular empirical specification in Kocher et al. (2018) in which the probability of a group lie depends on the total number of group members that lied as an individual.

this form of social image concern is more salient? In this paper, we pose these questions for individuals across a broad spectrum of characteristics, including demographic, economic and political characteristics, and find that male participants in all specifications, and pairs of younger participants in some specifications show a social-image preference for honesty.

In addition to peer effects and social image issues, this paper addresses a third driver of team-level dishonesty through the differential power of influence that each committee member may wield. Organization researchers and social psychologists have long highlighted multiple reasons why individuals interacting in a group can command different levels of influence in making decisions for the group (French and Raven 1959). Such power asymmetry are naturally dyadic or multilateral in nature depending not just on the characteristics of one person. Rather, what matters is the difference in characteristics between people, or the juxtaposition of characteristics in a group of many (e.g., Fousiani 2020). Two prominent power indicators particularly relevant to our context are position / reward power, and referent power (French and Raven 1959). Specifically, characteristics such as seniority puts a person in a position of being able to levy punishment / offer benefits to others through words of praise or lack thereof. Such positional power, notably in politics, confer additional external costs for anyone launching disagreements, but particularly to a person in a weaker, more junior position (Hall and Shepsle 2014). In our application, since participants are of similar rank in the government hierarchy, we introduce age and education differences as a indicator positional power.

Referent power is more nuanced—people who harbor referent power are influential as they lead by being able to convince others who identify with them (e.g. respect, admiration and likability) to behave collectively (Lucas and Baxter 2012). Referent power due to affinities and similarities may be driven by multiple reasons in our context, including personal characteristics (e.g. age, gender, religion and caste), and job performance and popularity markers (e.g. winning a contested seat in local government, winning a reserved seat designated for female and/or backward castes, and being in the majority political party (Bhavnani 2009; Jensenius 2017)). In this paper, we operationalized these notions of power asymmetry in a team dishonesty experiment.

This paper contributes to understanding the interpersonal dynamics in team-based setting by simultaneously testing the salience of peer effects, social image concerns, and power asymmetry. We do so by following the predictions of our model, and estimating the determinants of dishonesty concession by account for (i) the propensity for dishonesty one's team members elicited in the first stage, (ii) personal characteristics conditional on own propensity for dishonesty elicited in the first stage, and (iii) the interaction between power-proxies and the gap in dishonesty preference between team members.

#### 3 The experimental setting

Our study targeted the Nadia district in West Bengal, India. This selection was made based on feasibility of conducting the project, accessibility and cooperation from local authorities. We also excluded areas experiencing ongoing violence or political instability. Following these criteria, we short-listed four blocks within Nadia district: Chakdaha, Haringhata, Kalyani, and Krishnaganj. From these blocks, 12 gram panchayats (GPs), or village councils, were selected for further evaluation. Before formal visits, we visited the Gram Panchayat offices to schedule meetings with the Panchayat Pradhans (heads). During these meetings, we introduced ourselves as a research team from Cornell University, UNU-WIDER, and the University of Helsinki. We explained that our study aimed to understand how politicians in India make decisions under uncertainty and report outcomes of events that involve chance in individual and group settings.

Out of the 12 GPs originally invited to participate, we were able to conduct our surveys and field experiments in 10 of them. A total of 167 Panchayat members (village council members) were invited to participate. Of these, 124 members (74%) completed the survey and 121 members completed both the individual survey, the individual- and pair-die game. The research team visited each of the 10 GPs to complete surveys and die games. The number of participating Panchayat members ranged from 4 to 18 per GP. In each GP, we implemented the two-stage experimental protocol shown in Figure 1. In the first stage, each Panchayat member was asked to play the die game alone, in which each participant is requested to roll a die 18 times and count the number of resulting 6's. We will refer to a member that rolled greater than 3 6's as a high roller (H), and a low roller (L) otherwise. Participants are not aware during the first stage that there will be a second stage in which teams of individuals will pair up to engage in a second round of experiments.

We use the first stage observations to form pairs of GPs to play a second stage game. Our pairing strategy is as follows. Each participant will play at least one paired die game. Participants are matched, as much as possible, to yield even number of pairings that are higher rollers only, low rollers only, and mixture of high and low rollers. In GPs with more participants, we also strive to have balanced gender and age representation in each of the three types of pairings. Due to the small number of participants per GP, some players will repeat the group game so all

<sup>&</sup>lt;sup>9</sup> In accordance with Article 40 of the Indian Constitution, in 1992, the 73rd Amendment Act was enacted by the Indian national government to improve local self-governance in India. The Act formalizes a three-tier (villages, block and district levels) Panchayat Raj system of local governance, which functions to decentralize governance authority and resources to democratically elected local officials. In every village council, seats are set aside by law for members of the Scheduled Castes and Schedule Tribes. At least one-third of all seats to be filled by direct election are reserved for women. Such seat may be allotted by rotation to different constituencies. The typical term of office is five years.

players play at least one paired game. We also varied the payment rate. In 4 out of the 10 GPs, respondents receive 50 rupees for every 6 they report to have observed. In the other 6 GPs, the payment rate is 10 rupees. 10

A distinct advantage of the small number of participants per GP we work with here is that an overwhelming majority of the Panchayat members within a GP already knew each other prior to the experiment—as we confirmed in our post-experiment survey. Player knowledge about each other and our pairing strategy generates exogenous variations in peer encounters pairings based on individual indifference to dishonesty. At the end of each paired game, we record the die count for each pair and the identity of (including the number of times played by) each member of the pair.

Before we discuss the data and the estimation, we present a model of dishonesty concession in teams to explain our estimation strategy and identification assumptions.

#### 4 Modeling dishonesty in teams

Consider a die roll experiment, where player i is asked to roll a 6-sided dice n times, and report the number of times a given number # appears (e.g. 6),  $r_i$ . Let t denote the true number of times # appeared,  $t \in \{0,...,n\}$ . t is distributed binomial, with cumulative distribution function B(t,n) and mean  $\nu$ .

Individual dice report, r

Let the utility function of the player be approximated by a quadratic cutility function:

$$u_i(r_i,t) = \begin{cases} (r_i-t) - (r_i-t)^2/(2\delta_i) & \text{if } r_i \ge t \\ (r_i-t) & \text{otherwise} \end{cases}.$$

The utility function reflects the tradeoffs between benefits of cheating  $r_i - t$ , and the psychological cost of dishonesty parameterized by  $\delta_i$  (e.g. Kartik 2009; Gneezy et al. 2018; Abeler et al. 2019).

Henceforth,  $\delta_i$  will be referred to as the player-specific level of indifference to dishonesty.  $\delta_i$ adjusts the cost of dishonesty depending on the size of the deception measured in die roll count deviation from the truth,  $r_i - t_i$ .<sup>11</sup>

<sup>&</sup>lt;sup>10</sup> We did not perform payment randomization within GP, as GP members know each other and we expect perceived preferential and unequal treatment with GPs to reduce the participation rate during the experiment.

<sup>&</sup>lt;sup>11</sup> The cost of lying can come in multiple forms. Some lying costs are related to the size of the lie due for example to the psychological and the reputational consequences of lying (e.g. in terms of actual deviation from the truth, the

For each revelation of t after n throws, the utility maximizing choice of  $r_i$ , call it  $r_i^*$ , is:

$$r_i^* = t + \delta_i > t \tag{1}$$

if and only if  $\delta_i > 0$ . The die roll report is equal to the true value t plus a player-specific adjustment term that is given by  $\delta_i$  (indifference to the extent of dishonesty).

Importantly, therefore,  $r_i^*$  directly gives an estimate of  $\delta_i$  for each individual i, for  $t = \nu + i$ s an i.i.d random variable with mean  $\nu$  for participant i:

$$\delta_i = r_i^* - \nu - . \tag{2}$$

*Group dice report, R* 

We again let the utility function of the player be approximated by a quadratic utility function, in which

$$U_i(R,t;\delta_i+\sigma_{ip}) = \begin{cases} (R-t) - \frac{1}{\delta_i+\mathbb{I}_G\sigma_{ip}} (R-t)^2/2 & \text{if } R_i \geq t \\ (R_i-t) & \text{otherwise} \end{cases}.$$

 $U(R,t,\sigma_i)$  takes into account the utility adjustment required when an individual participate in a social act of dishonesty.  $\mathbb{I}_G$  is an indicator variable equaling unity when decisions are made in a group, and zero otherwise.  $\sigma_{ip}$  complements  $\delta_i$  to indicate any revised psychological cost of dishonesty within a group setting (Akerlof and Kranton 2000, 2005; Bénabou and Tirole 2006; Bursztyn and Jensen 2017; Charness and Chen 2020). In particular, we assume that  $\sigma_{ip}$  is made up of:

$$\sigma_{ip} = \sigma_o + \beta^{\mathbf{x}} \times \mathbf{x}_i + \beta^{\mathbf{y}} \times \mathbf{y}_{\mathbf{p}}$$

where  $(\beta^{\mathbf{x}} \times \mathbf{x}_i + \beta^{\mathbf{y}} \times \mathbf{y}_p)$  captures social image effect associated with dishonesty – how the vector of individual characteristics of group member i ( $\mathbf{x}_i$ ) (such as gender, age, education level, and political seat characteristics (e.g. reserved / uncontested)), and the vector of pair-wise characteristics  $\mathbf{y}_p$  (such as similar gender, age, education level, political position characteristics and political affiliation) for example, are associated with whether i prefers to scale up or down

likelihood of that a reported outcome is viewed as a lie (Gneezy et al. 2018; Bénabou and Tirole 2006; Fischbacher and Föllmi-Heusi 2013). Studies have also taken into account the intrinsic cost of lying per se, regardless of the size of the lie (e.g. Kajackaite and Gneezy 2017; Abeler et al. 2019) in terms of a fixed cost of lying. See Abeler et al. (2019) for an extensive treatment including other contributors associated with lying aversion such as inequality aversion and social image concerns, for example. In our setting,  $r_i - t_i$  directly measures the size of the lie. Furthermore, the larger  $r_i$  is, in the context of our die-roll experiment, the more likely it is a lie. Thus  $r_i$  measure the size of the lie in both outcome and likelihood terms. Finally, when  $\delta = 0$ , the individual is incorruptible and never lies. This is isomorphic to having a high fixed intrinsic cost of lying.

the level of dishonesty relative to his individual dice report  $r_i^*$  when decision-making takes place in the presence of others.

The two individuals in the pair die game jointly report one single die roll count. We assume that the decision,  $R_{ii}^*$  is reached via Nash bargaining, which solves:

$$R_{ijp}^* = argmax_R \left[ U(R, t, \delta_i + \sigma_{ip}) \right]^{\alpha_i} \left[ U(R, t, \delta_j + \sigma_{jp}) \right]^{1 - \alpha_i}$$
(3)

for any revelation of the true die roll count t.  $\alpha_i \in [0,1]$  is a bargaining strength parameter.

Let  $\rho_{ijp} \equiv R_{ijp} - t$ , thus, an interior solution  $R_{ijp}^*$  solves:

$$R_{ijp}^* = \left\{ \rho_{ijp} \left| \frac{\alpha_i(\delta_i + \sigma_{ip} - \rho_{ijp})}{2(\delta_i + \sigma_{ip}) - \rho_{ijp}} + \frac{(1 - \alpha_i)(\delta_j + \sigma_{jp} - \rho_{ijp})}{2(\delta_j + \sigma_{jp}) - \rho_{ijp}} = 0 \right\}.$$
 (4)

It follows directly from (4) that the group dice report deviation from the truth  $\rho_{ijp}^*$  lies in between  $\delta_i + \sigma_{ij}$  and  $\delta_j + \sigma_{jp}$ . Thus, the group report  $\rho_{ijp}^*$  indeed indicates a compromise between  $\delta_i + \sigma_{ip}$  and  $\delta_j + \sigma_{jp}$ . Interestingly, note that if one of the two individuals, say i, happens to be incorruptible, or if  $\delta_i + \sigma_{ip} \to 0$ ,  $\rho_{ijp}^* = 0$  uniquely solves (4) since no degree of compromising the truth  $R_{ijp}^* > 0$  can make i better off than disagreement.

More specifically, let  $D_{ip} \equiv \delta_i + \sigma_{ip}$  denote the sum of the individual and social image related propensity for dishonesty. Also let  $\theta_i$  be the a share in [0,1], such that the solution  $\rho_{ijp}^*$  of the Nash bargaining problem is given by:

$$\rho_{ijp}^* = \theta_i^* D_{ip} + (1 - \theta_i^*) D_{jp}, \ \theta_i \in [0, 1].$$

Equation (4) requires that

$$\frac{\alpha_i (1 - \theta_i) (D_{ip} - D_{jp})}{D_{ip} + (1 - \theta_i) (D_{ip} - D_{jp})} = \frac{(1 - \alpha_i) \theta_i (D_{ip} - D_{jp})}{D_{jp} + (1 - \theta_i) (D_{jp} - D_{ip})}.$$

Rearranging, we have

Proposition 1 The solution  $\rho_{ijp}^* = R_{ijp}^* - t$  to the Nash Bargaining problem in (4) satisfies the following properties:

•  $\rho_{ijp}^*$  is a weighted average of  $D_{ip} \equiv \delta_i + \sigma_{ip}$  ad  $D_{jp} \equiv \delta_j + \sigma_{jp}$ :

$$\rho_{ijp}^* = \theta_i^* D_{ip} + (1 - \theta_i^*) D_{jp}, \ \theta_i \in [0, 1],$$

• the weight  $\theta_i^*$  is a function of bargaining strength  $(\alpha_i)$  and relative indifference to dishonesty  $(D_{ip}/D_{jp})$  only.  $\theta_i^*$  is the unique solutions to the following

$$heta_i^*(lpha_i, D_{ip}/D_{jp}) = \left\{ heta_i | rac{1- heta_i}{ heta_i} rac{lpha_i + heta}{1-lpha_i + (1- heta_i)} = rac{D_{ip}}{D_{jp}}
ight\}$$

• the weight  $\theta_i^*$  is baselined at (greater than, less than) the bargaining strength parameters  $\alpha_i$  of each player if and only if  $D_{ip} = D_{jp}$  ( $D_{ip} < D_{jp}$ ,  $D_{ip} > D_{jp}$ ).

$$heta_i^* = lpha_i - \Omega\left(rac{D_{ip} - D_{jp}}{D_{jp}}
ight), \;\; \Omega \equiv heta_i^* (1 - lpha_i + 1 - heta_i^*) \geq 0.$$

Henceforth, define the dishonesty concession for player i when engaging in a paired game as

$$\varkappa_{ijp} = \rho_{ijp}^* - \delta_i.$$

It follows directly from Proposition 1 that

$$\varkappa_{ijp} = (1 - \theta_i^*)(\delta_i - \delta_i) + \theta_i^* \sigma_{ip} + (1 - \theta_i^*) \sigma_{jp}. \tag{5}$$

From (5), it is apparent that the determinants of  $\varkappa_{ijp}$  is across three dimensions. First, peer effects  $(\delta_j)$  occurs when  $\varkappa_{ijp}$  is increasing in  $\delta_j$ . Social image effects  $(\sigma_{ip}, \sigma_{jp})$  arises when  $\varkappa_{ijp}$  is increasing in  $\sigma_{ip}$  and  $\sigma_{jp}$ . Finally, power asymmetry effect  $(\alpha_i)$  is present as  $\varkappa_{ijp}$  is increasing in  $\alpha_i$  (via  $\theta_i^*$ ) if and only if  $D_{ip} > D_{jp}$ .

#### 4.1 Estimation notes and identification assumptions

Equation (5) is nonlinear. The equation we estimate is a linearized version, whereby:

$$\varkappa_{ijp} = \varkappa_o + a\delta_i + a_o\delta_j 
+ \mathbf{b}^{\mathbf{x}} \times \mathbf{x}_i + \mathbf{b}^{\mathbf{x}}_{\mathbf{o}} \times \mathbf{x}_j + \mathbf{b}^{\mathbf{y}} \times \mathbf{y}_{\mathbf{p}} 
+ \mathbf{c} \times \alpha_i(\delta_i - \delta_j) +_{ijp}$$
(6)

where  $\kappa_o$  is a constant.  $a_o$  the peer effect coefficient which shows the extent of dishonesty compromise when the peer team member's tolerance for dishonesty changes.  $\mathbf{b^x}$  and  $\mathbf{b_o^x}$  are vectors of social image coefficients for the player and the other (o) partner player.  $\mathbf{b^y}$  is the vector of coefficients capturing the impact of the pair-characteristics on the extent of social image sensitivity. Finally,  $\mathbf{c}$  is a vector of coefficients capturing the interactive effect of a vector of bargaining strength proxies  $\alpha_i$  and the dishonesty difference  $\delta_i - \delta_j$ .

While  $r_j^*$  is the best we can do even in an experimental setting to elicit  $\delta_j$ , we do still confront potential estimation challenges. From equation (2), we know that our use of  $r_j^*$  as a proxy for  $\delta_j$  as a explanatory variable in our estimation gives rise to a classical errors-in-variables problem (Angrist and Pischke 2009). This directly implies endogeneity related biases, potentially resulting in a negative bias in our estimate of the peer compromise effect  $a_o$  if the true  $a_o$  is positive, and a positive bias if the true  $a_o$  is negative. Thus, if we observe a positive estimate of  $a_o$ , the true  $a_o$  should in fact be higher due to the classical measurement error that we cannot avoid.

Another concern is that our power asymmetry effect should ideally take into account the interactive effects of the team-based dishonesty differential  $(D_{ip} - D_{jp} = \delta_i + \sigma_{ip} - \delta_j - \sigma_{jp})$ , and not just the individual dishonesty difference, proxied by the observed  $r_i^* - r_j^*$  measured in the first stage. Our rationale is that since we do not know the precise form that the social image concern difference  $(\sigma_{ip} - \sigma_{jp})$  will take, the best we can do is to use the individual dishonesty difference alone as proxy of a part of the difference. We also note that social image effect  $\sigma_{ip}$  potentially has two parts, based on individual characteristics,  $x_i$ , and pair characteristics  $y_p$ . Now,

$$\sigma_{ip} - \sigma_{jp} = \sigma_o + \beta^{\mathbf{x}} \times \mathbf{x}_i + \beta^{\mathbf{y}} \times \mathbf{y}_{\mathbf{p}}$$
$$-[\sigma_o + \beta^{\mathbf{x}} \times \mathbf{x}_j + \beta^{\mathbf{y}} \times \mathbf{y}_{\mathbf{p}}]$$
$$= \beta^{\mathbf{x}} \times (\mathbf{x}_i - \mathbf{x}_j).$$

In the sequel, to address the potential missing variable biases introduced here, we will include additional specifications in our empirical analysis that interact our power asymmetry  $(\alpha_i)$  proxies with pair-wise difference in individual characteristics such as gender types, education levels, and age to account for the difference in  $(\mathbf{x}_i - \mathbf{x}_j)$  as shown above.

A final concern is that of spurious correlation. In particular, it may be the case that our first-stage dishonesty proxies are correlated with observable individual characteristics. As such our measure of peer effects may not necessarily measure how a peer player's level of dishonesty affects dishonesty concession. Rather, players may just be responding to the individual observable characteristics associated with dishonesty. This is an important point, and we will address this question by checking whether our individual dishonesty proxies  $(r_i^*)$  are indeed correlated with observable individual characteristics  $x_i$ , to ascertain whether the power asymmetry effects were driven by individual observable characteristics rather than individual dishonesty levels in Section 5.

#### 5 Data

Table (1) displays summary statistics the results of the die experiments as well as the characteristics of the individuals and pairs. Recall that the theoretical average number of 6's that will be observed after 18 dice rolls should be  $3 (= 18 \times (1/6))$ . In the first round, we find that the average reported number of 6's is slightly higher than 3 at 3.6. In the pair-game, the pair-game average is slightly less at 3.4. This indicates a dishonesty concession of -0.2. In other words, groups reports are slightly more consistent with the theoretical average of 3, indicating that group behavior tended to be slightly more honest. This observation echoes findings from an emerging literature showcasing groups as less susceptible to behavioral biases than individuals (Kugler et al. 2007; Charness and Sutter 2012). In Figure (2), we display the theoretical binomial plots of the frequency of 6's in 18 dice rolls, and the observed individual and group densities. Evidently, both individual and group densities in our experiment tend to be more spread out to the right, and furthermore, the individual density plot is more spread out than the group density. These suggest that when respondents work in groups, they are less likely to report extremely high counts of observed 6's.

#### Dishonesty concession, own- and other- individual die counts

To further examine the relationship between group and individual die counts, we show a binscatter plot of the dishonesty concession (group count in the second stage net of own individual count in the first,  $R_{ij}^* - r_i^*$ ) against the individual count of the pair partner  $r_j^*$  in Figure (3) by gender with GP fixed effects as controls. We find that for both male and female players, the more dishonest the peer player, the higher the dishonesty concession. Figure (4) shows a binscatter plot of the dishonesty concession against the individual's own first stage die roll count with GP fixed effects as controls. We find that both for male and female players, the more dishonest the individual player, the smaller the dishonesty concession. Both of these observations, though not yet controlling for other variables, are consistent with the theory presented in Section (4). Interestingly, from these figures, we also observe hints of social image effects by gender. In particular, the male dishonesty concession appears to be uniformly lower than that of females in both figures. In other words, when operating in a team environment, male respondents tend to scale down the die roll count relative to their individual reports by more than what their female counterparts do.

#### **Balancing**

Returning to Table (1), a few observations regarding the balancing work we conducted prior to the group games are in order. In particular, note that about 68.5% (76 out of 111) of the respondents are first-stage high rollers. In the pair groupings, we were able to maintain a similar ratio of high rollers, 71.2% (79 out of 111) as peers for both first-stage high rollers (73.7%, 56

out of 76) and first-stage low rollers (65.7%, 23 out of 35). Group partner gender shares are also quite similar. In all, 46.8% of all players are male. In turn, 48.7% of male peers are matched with first-stage high rollers and 54.3% of male peers matched with first-stage low rollers. In addition, 26.3% of first-stage high rollers are treated with pairing in which both players are male, compared to 31.4% of first-stage low rollers who received the same both-male treatment. Pair partner average age range from 43 to 47 across first-stage high- and low-rollers.

Due to the small number of observations we work with in the present context, our aim is to focus on balancing with respect to dishonesty elicited in the first stage, gender and age. We are not able to perform balancing based on the other individual characteristics of the respondents as well. Table (1) reports the distribution of peer political position characteristics across high- and low- first-stage rollers. In particular, 58.6% of the players hold reserved seats in our sample. The shares of high- and low- first stage rollers who are matched with reserve seat holders are 64.5% and 51.5% respectively. Furthermore, 34.2% of the players hold uncontested seats in our sample. The shares of high- and low- first stage rollers who are matched with uncontested seat holders are 34.2% and 28.6% respectively.

In 4 out of the 10 GPs in which we conducted the experiment, we introduced a payment treatment, whereby respondents receive 50 rupees per observed 6 reported. In the rest of the GPs, the payment rate is 10 rupees. Table (1) shows the associated summary statistics. We see that a 40 rupees difference in the payment rate appear to have little effect if at all on the average individual die count. The group die count is higher on average, however, with the low payment treatment. In all of our regression results in what follows, we will include GP fixed effects which will capture both the effects of differences in experiment site settings as well as payment differences.<sup>12</sup>

#### Validation

To validate the die counts elicited in the first stage of our protocol as meaningful proxies of dishonesty preference when the tradeoffs are potential monetary gains, we implement two additional steps. First, we add a 12-sided die count exercise in the first stage. Here, we ask each participant to record the number of 6's they observe after 24 die rolls, 13 with adjusted payoff multipliers so that the 6-sided and the 12-sided die games yield the same expected payoffs if

<sup>&</sup>lt;sup>12</sup> We do with include payment difference within GPs because we expect that participation rate will fall midway through the experiment when players realize some are paid more than others.

<sup>&</sup>lt;sup>13</sup> The statistical expectation of the number of times a 6 should appear after 24 die rolls using a 12-sided die is 2  $(=24 \times (1/12))$ .

participants tell the truth.<sup>14</sup> We do so to check the consistency in the preferences elicited in the die games and sought in particular to see if elicited preferences may be perturbed using different preference elicitation tools, in our case, the type of die used. Figures A1 and A2 display a pair of binscatter plots, respectively with and without GP fixed effects as controls, showing that players who reported higher die counts in the 6-sided case generally reported higher die counts in the 12 sided case as well. OLS and Poisson regressions (Table (A2)) confirm that the correlations are statistically significant at the 1 % level, and the average number of 6's reportedly observed in the 6-sided and the 12-sided cases are at 3.66 and 3.77 respectively.

Next, to validate that the die counts are indeed correlated with individual preferences about the social appropriateness of taking self-serving monetary advantages out of a common pot, we also elicited responses from participants related to their views about the social appropriateness of different ways in which money is allocated in a dictator game, and in a bully game as in Krupka and Weber (2013). In the dictator game, participants are presented a hypothetical outcome from a Dictator Game between two individuals A (the dictator) and B (the recipient). The allocation we ask the participant to consider is that individual A gets the entire endowment (Rs. 1000) while individual B is never made aware of this choice by individual A and thus receives nothing. In the bully game, we ask the participants to consider another hypothetical setting between A and B, but here individuals A and B are initially allocated Rs. 500 each to begin with. Individual A now has to decide whether to take Rs. 500 from individual B, leaving B with nothing. Participants are asked to choose from 4 options corresponding to each hypothetical allocation made by individual A, and label them as 'very socially appropriate', 'somewhat socially appropriate', 'somewhat socially inappropriate' or 'very socially inappropriate'.

Using the responses, we estimate two multinomial logit regressions to examine the relative odds of three options with and without GP fixed effects, relative to the base response category 'very socially inappropriate'. Standard errors are clustered at the GP level. Table (A3) shows the results. In both OLS and Poisson specifications, we find that a participant with a higher first stage die count (6-sided dice) is relatively more likely to consider the dictator takes all scenario to be 'somewhat socially appropriate' and 'very socially appropriate'. Similarly, a participant with a higher first stage die count (6-sided die) is relatively more likely to consider the bully takes all scenario to be 'somewhat socially appropriate'. The relative effect is statistically significant at the 1% level in both cases. <sup>15</sup>

<sup>&</sup>lt;sup>14</sup> Thus, players who received 10 (50) rupees per reported number of 6 observed in the 6-sided die game will receive 13.33 (66.66) rupees per reported number 6 observed in the 12-sided die game. The average payoff is 40 rupees (200 rupees) per game per participant.

<sup>&</sup>lt;sup>15</sup> We asked the respondents to assess the social appropriateness of other allocation of money between A and B. For completeness, we show these results in Appendix and discuss these in relation to our work.

Thus, the first-stage die count using 6-sided dice appear to portray individual characteristics that are quite consistent across die types. The 6-sided die counts also appear to show meaningful relationship with the individual attitudes concerning the appropriateness of taking money from a common pot without (the dictator game), or with (the bully game) the knowledge of others. Henceforth, we will use the 6-sided die count as a proxy for the indifference towards dishonesty, or, the  $\delta_i$  in our model.

### 6 Empirical findings

Tables (2) and (3) show estimation results on the determinants of the dishonesty concession. The dishonesty concession, as defined in equation (5) above, is the gap between group die count response and individuals i's own die count in the first stage. Table (2) uses OLS with GP fixed effects and standard errors clustered at the GP level. Table (3) reports Poisson regression results with GP fixed effects and standard errors clustered at the GP level. Column 1 only includes peer compromise effect variable, namely, the individual die count of the group partner in stage  $1 r_j$ ,  $j \neq i$ . A positive coefficient here will suggest that dishonesty increases relative to one's own baseline when the group partner is also dishonest. These tables report the selection of results that are consistently statistically significant across most specifications in the OLS and the Poisson regressions. The full list of results can be found in the Appendix in Tables A5 and A6.

Columns 2–3 include a vector of potential social image effects correlates, to include the gender, age, earnings, the level of education, respectively, of both players respectively. A negative coefficient associated with an individual who is male, for example, would indicate that conditional on  $\delta_i$ , a male scales down the extent of dishonest reporting when the reporting is done in the presence of another respondent. In this case, male respondents are more responsive to the social stigma associated with dishonesty. Meanwhile, a negative coefficient associated with group partner being male, for example, would mean that a player is more susceptible to the social stigma of dishonesty when the person observing the choice is a male. A player is classified as junior if he/she is younger than the average village council member (at 45 years of age).

Columns 3–4 add power asymmetry variables,  $A_{ij}$ . For our metrics of power asymmetry, we following bargaining literature to focus on the difference between players due to (i) information asymmetry about the costs of disagreeing with another person (Stiglitz 1975; Mirrlees 1976) and (iii) the actual difference in costs and benefits associated with disagreeing with another person (Chamberlain 1951), and (iii) the social context of the negotiation that captures existing power dynamics between individuals formed during or prior to the exchange (Blau 1964; Emerson 1976). These theories suggest that power asymmetry can arise from differences in

individual characteristics encompassing demographic attributes (e.g. gender, age), skill levels (e.g. education), power-conferring majority/minority status (e.g. caste, religion), and particularly salient in our context, political status differences.

Thus, we construct the following pair-specific dummy variable. For power asymmetry driven by gender differences, we let  $A_{ij}^{gender}=1$  if player i is male, and j female, and zero otherwise. For power asymmetry related to age, we let  $A_{ij}^{age}=1$  if player i is older than j, and zero otherwise. To accommodate power asymmetry when players differ in education attainment, we define  $A_{ij}^{edu}=1$  if i has more years of education than j, and zero otherwise. We also let  $A_{ij}^{gen-caste}=1$  if player i is not a member of the Other Backward Caste, Schedule Caste and Scheduled Tribes caste category but not player j.  $A_{ij}^{gen-caste}=0$  otherwise. Similarly, we let  $A_{ij}^{hindu}=1$  if player i is Hindu (the religious majority in the Nadia district of West Bengal) and not player j.  $A_{ij}^{hindu}=0$  otherwise.

Turning now to political power asymmetry, we let power asymmetry that may arise when one member of the pair holds a reserved seat, while the other a non-reserved seat by defining the variable  $A_{ij}^{reserve} = 1$  if i holds a reserved seat and j not, and zero otherwise. We do the same for pairs whereby one player holds a seat that was not contested (i.e. there was only one person running), and the other contested. The variable we define is:  $A_{ij}^{contest} = 1$  if i holds a contested seat, and j an uncontested seat, and zero otherwise. Following our theory, we interact these power asymmetry proxies with the corresponding individual dishonesty difference  $\gamma_i - \gamma_j$  in order to assess whether a particular form of power asymmetry enables player i to more readily impose his/her dishonesty preference over that of another player.

#### The salience of peer effects

We begin our discussion with a look at our findings related to peer effects—in other words, whether the a player's own dishonesty concession is correlated with the group partner's first stage die count—our proxy for the partner's indifference to dishonesty. We find that in all specifications, the coefficient for the group partner die count is always positive, and statistically significant, indicating that an individual becomes more tolerant towards group dishonesty the more dishonest the group partner is. In terms of the size of the effects, we note that a unit increase in the number of 6's reported by participant's peer member in the team increases the individual's dishonesty concession by 0.116 to 0.242 across different specifications that include peer, social image and power asymmetry effects. Since the coefficient is positive and significant, accounting for the classical error-in-variable bias (Angrist and Pischke 2009) will only reinforce the conclusions the peer effect is positive.

#### The gendered and age-related markers of social-image effects

To capture social image effects, we include for consideration an extensive list of individual and pair characteristics including (i) demographic controls such as the gender, age, and caste of the participant; (ii) political status controls such whether the seat currently occupied is: a reserved seat for under-represented castes, an uncontested seat with no other person running for the position; and (iii) economic status controls such as the level of education and earnings. We introduce these potential correlates, after controlling for the individual's own first-stage die count—our proxy for the individual's own dishonesty preference when the plausibly deniable dishonest act is carried out alone. Thus, suppose we find that being older was shown to be associated with a lower dishonesty concession, controlling for the individual's own first-stage die count, the interpretation we draw will be that being older is associated with a stronger desire to appear, in the company of others, to uphold a more ethical stance due to social-image concerns.

Among the variables included, we find that being male is strongly and negatively associated with dishonesty concession, in other words, male participants tend to scale down their die counts in a group setting. In particular, a male participant implies a reduction in the corresponding group die count by 1.29 to 2.07 (across specifications) relative to the female counterpart, conditional on individual die count. Having a male peer has a similar negative effect on the group number, consistent with the property of the Nash bargaining that incorporates both player's aversion to dishonesty in the group die report. Finally, and interestingly, if both players are male, this social image effect is curtailed. Indeed, in a specification where we only compare pairs with both males, and pairs with other gender compositions, we find no statistically significant effect. These findings provide suggestive evidence of gender-based differences in social image concerns, and speaks to a growing literature on the role of gender and corruption (e.g., Barnes and Beaulieu 2019; Muehlheusser et al. 2015), and importantly adds gender-composition effects on dishonesty in teams as a novel observation (e.g., Decarolis et al. 2023; Abeler et al. 2014; Conrads et al. 2013; Childs 2012; Dreber and Johannesson 2008; Dufwenberg and Muren 2006).

Social-image concerns in group die counts appear to be salient when both members of the team are junior as well (less than the sample mean 45 years of age), although the effect is mild. In particular, having two junior participants decreases the corresponding group die count by around 0.08. This is again consistent with the role of reputation discussed earlier. In particular, junior participants who have not had as many opportunities to interact with one another stand to gain most from demonstrating honesty. Interestingly, just having one participant of the team (own, or other) who is junior can have the opposite effect, although this effect is not always statistically significant. This suggests pairing a junior with a senior individual may indeed

discipline the junior member, and in our case, to become more open to committing a dishonest act.16

The power of elected politicians in non-reserved seats

Turning to power asymmetry effects, as noted, we construct a list of possible power asymmetry correlates, to include power asymmetry related to gender, age, education, religion, caste, reserve seat status and uncontested seat status. Guided by theory, we interacted these power asymmetry metrics with the difference between a player and her peer's individual level of dishonesty assessed in the first stage individual experiment. We find that having a reserved seat is strongly and negatively associated with the ability to impose one's dishonesty preference on group outcome. Interesting, individuals with reserved seats do not seem to exhibit as a social image concern. Only after interacting with the difference in pair-level dishonesty metrics does the reserved seat effect emerge. While research on the ability of GP members with reserved seats on public goods provision has generated findings suggestive of public-conscious preferences shown by individuals holding reserved seats (e.g., Pande 2003; Chattopadhyay and Duflo 2004), and a low likelihood of re-election success if the quota was removed (Bhavnani 2009; Jensenius 2017), the concessions made by reserved seat holders in group / committee settings has, to the best of our knowledge, not yet been studied or demonstrated.

In addition to power conferred to an individual that won a position in an open election with no limits related to representation, we find that there are instances where individuals in the Hindu majority appear to wield greater power of influence in the team setting (Table (A4)). We also find that there are specifications in which caste-based power asymmetry also seem to be prevalent, whereby members of the protected caste categories appear to wield less influence in determining the team die count (Table (A4)). However, we find that once seat-based power asymmetry (reserved seat for female or protected caste categories or not) is accounted for, these effects are no longer statistically significant.

Finally, we conducted a number of additional checks to verify these findings. One concern may well be that if individual dishonesty is correlated with discernible individual characteristics, our peer effects may be a reflection of the effect of these individual characteristics on dishonesty concession, rather than the tolerance to dishonesty of the peer per se. In Table (4), we present OLS estimates of the first-stage individual die roll count with a list of individual characteristics

gives rise to an increase in dishonesty concession (Table (A4). But these political party effects lack statistical significance in most specifications.

<sup>&</sup>lt;sup>16</sup> There are specifications where being in the majority political party, the AITC (All India Tinamool Congress),

with GP fixed effects to control for differences in experimental sites and payment rates. We find that the individual-level dishonesty is uncorrelated with individual characteristics.<sup>17</sup>

Since the original theoretical prediction related to the outcome of the Nash bargaining yielded a non-linear relationship between peer effect with the dishonesty concession, we ran a series of quantile regression to see whether the peer effect continues to be salient at different quantiles. In Table (5), we find the peer effect is in fact very robust across quantiles, except for the extremes (<30%,>70%).

#### 7 Conclusion

Group-based decisions are ubiquitous in public-policy making. In this paper, we ask whether a politician's propensity to act in a dishonest fashion change when dishonesty happens in a group-rather than individual setting. We singled out three types of mediating influences, including peer effects, social image effects, and power asymmetry effects.

We conducted a die-roll dishonesty experiment among local village council members in 10 GPs in the state of West Bengal in India. The novelty of our work is based on a novel two-stage experimental design, whereby in the first stage, we elicit individual propensity for dishonesty in full secrecy in private. In the second stage, we form balanced pairs of individuals and asked them to play the same die game as a pair. We exogenously generate group-level variations in individual dishonesty pairings, along with variations in other characteristics such as gender, and age. We also theoretically model the decision-problem of the team in order to guide our empirical inquiry, and so the potential roles that peer effects, social image effects, and power asymmetry effects can play in the group outcome.

We empirically test the salience of peer effects, social image concerns and power asymmetry on dishonesty concession—the difference between the team die roll count in the second stage and the individual die roll count in the first stage. We find a number of novel results. First, we find that individual dishonesty on average exceeds group dishonesty. Quite intuitively, dishonesty does indeed tend to thrive in secrecy. In addition, we find that peer effects are salient—an individual's dishonesty concession going from individual to a group setting is strongly and positively associated with higher dishonesty of the team member. We also find evidence of

<sup>&</sup>lt;sup>17</sup> Thus, unlike Chaudhuri et al. (2024), we do not find that inexperienced female tend to be more honest. A key reason may be the average age of the our participants is higher. Indeed, the average age of our participants is 45, thus strictly higher than the average age of both experienced (average age = 39) and inexperienced (average age = 36) female participants in Chaudhuri et al. (2024), but similar to the experienced male participants at 47 when the study finds that the gender gap no longer applies. We also checked by introducing first-term, and first-term females in the regression in Table (4) and find that neither are significant determinants of first-stage individual die roll count.

gender-specific social image effects—male participants tend to scale down their dice reports when in a group setting relative to what they would have selected in full secrecy. Finally, in terms of power asymmetry effects, we find that holding a reserve seat is associated with a reduced ability to impose once dishonesty preference in a group setting.

Many future research questions come to mind, building on what we have learned from this study. First, real world team interactions are sometimes one-shot by design, or more long term (Eckel and Grossman 2005; Charness et al. 2014). Incorporating the role of interaction history can provide novel nuances on how repeated interaction may deepen or weaken each of the three effects elaborated in this paper. Might player's individual sense of the cost of dishonesty change with repeated interactions with corrupt individuals, and how should the history of peer effects be evaluated? What is the meaning social image concern among people interacting for the first time, and others who might be working together on a more continual basis? Finally, does power beget power in long term relationships? These are all extremely important and novel questions to address in the dishonesty concession in teams literature.

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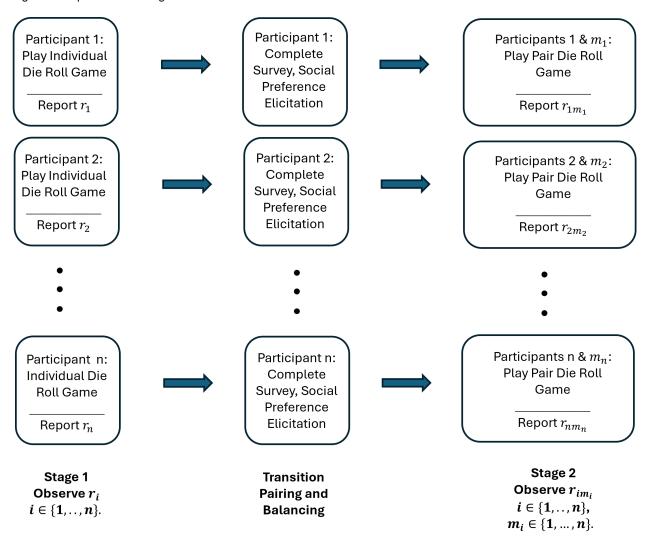
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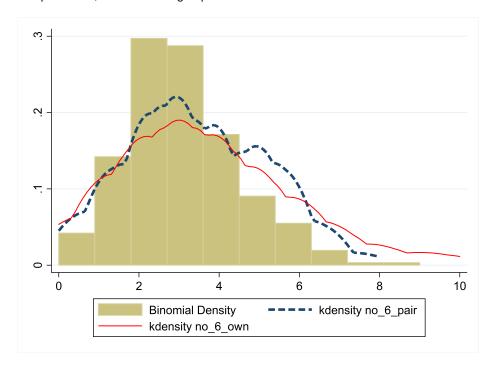
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Figure 1: Experimental design



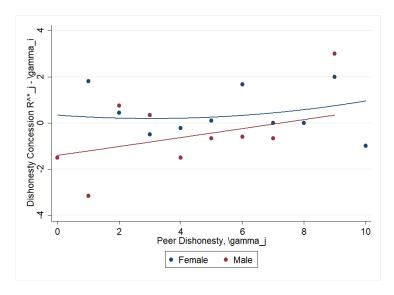
Note: 1. This figure shows the two-stage experimental protocol of the dice game as implemented within a GP. 2. In the first stage, each participant plays the die game in private. 3. In the transition period, participants are asked to complete a survey, and a social norm elicitation questionnaire. During this time, participant pairs are formed based on their first stage die count. 4. In the second stage, pairs of participants play the die game in private. Source: authors' elaboration.

Figure 2: Die roll plots: true, individual and group



Note: 1. This figure plots the histogram of a binomial distribution with 18 trials and probability of success of 1/6, and the kernel densities associated with the individual and pair die roll experiments. Source: authors' elaboration.

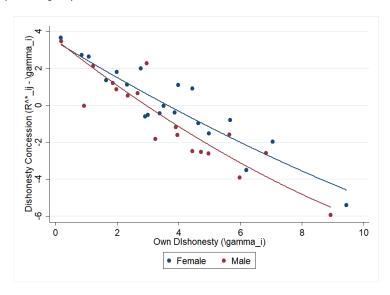
Figure 3: Binscatter plots of group and peer die roll counts



Note: 1. This figure provides a binscatter plot of the dishonesty concession (Group count in the second stage net of own individual count in the first,  $R_{ij}^* - r_i^*$ ) against the individual count of the pair partner  $r_j^*$ . 2. GP fixed effects are included as controls.

Source: authors' elaboration.

Figure 4: Binscatter plots of group and own die roll counts



Note: 1. This figure provides a binscatter plot of the dishonesty concession (Group count in the second stage net of own individual count in the first,  $R_{ij}^* - r_i^*$ ) against the individual own first-stage die count  $r_i^*$ . 2. GP fixed effects are included as controls.

Source: authors' elaboration.

Table 1: Summary statistics

	(1) All	(2) High roller	(3) Low roller	(4) With high	(5) With low
		first-stage ( $>=3$ )	first stage $(<3)$	payment	payment
	mean	mean	mean	mean	mean
Group die count	3.450	3.513	3.314	3.182	3.714
Own die count	3.631	4.658	1.400	3.600	3.661
Group partner die count	3.856	3.921	3.714	3.945	3.768
First-stage high roller share (own)	0.685	1.000	0.000	0.655	0.714
First-stage high roller share (other)	0.712	0.737	0.657	0.745	0.679
Male (own)	0.468	0.461	0.486	0.491	0.446
Male (other)	0.505	0.487	0.543	0.491	0.518
Both male	0.279	0.263	0.314	0.327	0.232
Years of education (own)	11.145	10.960	11.543	11.636	10.655
Years of education (other)	11.162	11.224	11.029	11.345	10.982
Both above average education	0.045	0.039	0.057	0.000	0.089
Both below average education	0.270	0.276	0.257	0.164	0.375
Annual earnings (own, rupees)	258205.607	273013.699	226411.765	288000.000	228962.963
Annual earnings (other, rupees)	264880.734	290108.108	211542.857	249358.491	279571.429
Both below average earnings	0.505	0.500	0.514	0.436	0.571
Age (own, years)	45.261	43.684	48.686	45.436	45.089
Age (other, years)	44.378	43.171	47.000	45.836	42.946
Both below average age	0.261	0.329	0.114	0.255	0.268
Reserved seat (own)	0.586	0.579	0.600	0.545	0.625
Reserved seat (other)	0.604	0.645	0.514	0.545	0.661
Both reserved seats	0.324	0.382	0.200	0.255	0.393
Uncontested seat (own)	0.342	0.342	0.343	0.291	0.393
Uncontested seat (other)	0.324	0.342	0.286	0.273	0.375
Both uncontested seats	0.225	0.237	0.200	0.145	0.304
Observations	111	76	35	55	56

Note: 1. This table displays summary statistics, including the results of individual- and pair-dice experiments, respondent characteristics, as well as the characteristics of the political position they hold. 2. Group Die Count and Own Dice Count respectively report the number of 6's observed in the pair- and individual games respectively. 3. A player is referred to as a high (low) roller if the player's first stage count of 6's observed is greater than or equal to (less than) 3. 4. The high (low) payment games offer 50 (10) rupees for each stated observation of 6.

Table 2: The determinants of dishonesty concession ( $R_{ijp}-\delta_i$ , OLS)

	(1) Peer effect only	(2) w/ social image effect (male)	(3) w/ social image effect (all)	(4) w/ power asym effect (reserve)	(5) w/ power asym effect (reserve&bothmale)	(6) w/ power asym effect (all)
	b/se	b/se	b/se	b/se	b/se	b/se
Group partner dice count	0.178**	0.197***	0.212***	0.133**	0.151**	0.213***
	(0.057)	(0.053)	(0.047)	(0.047)	(0.060)	(0.063)
Own dice count	-0.962***	-0.946***	-0.985***	-0.873***	-0.920***	-0.967***
	(0.069)	(0.060)	(0.073)	(0.074)	(0.080)	(0.078)
Male (own)		-1.383**	-1.794* <sup>**</sup>	-2.182***		-2.141**
,		(0.436)	(0.549)	(0.611)		(0.733)
Male (other)		-0.931* <sup>*</sup> *	-1.368 <sup>*</sup>	-1.739**		-1.825* <sup>*</sup>
,		(0.411)	(0.609)	(0.605)		(0.668)
Both male		1.310*	2.029* <sup>*</sup>	2.570* <sup>*</sup>	-0.220	2.552**
		(0.623)	(0.875)	(0.866)	(0.363)	(0.967)
Below average age (own)		0.185	0.182	0.494	0.301	0.457
		(0.278)	(0.440)	(0.308)	(0.432)	(0.289)
Below average age (other)		0.193	0.513	0.751	0.556	0.660
		(0.513)	(0.496)	(0.418)	(0.557)	(0.431)
Both below average age		-0.934	-1.069	-1.488*	-0.732	-1.443*
zem selem arenage age		(0.702)	(1.009)	(0.745)	(1.020)	(0.716)
AITC party (own)		0.312	0.115	-0.259	0.139	-0.175
, and party (own)		(0.725)	(0.615)	(0.575)	(0.561)	(0.547)
AITC party (other)		0.937	0.751	0.481	0.982*	0.431
711 o party (other)		(0.527)	(0.727)	(0.689)	(0.466)	(0.692)
Both aitc party		-0.362	-0.016	0.306	-0.583	0.256
Both and party		(1.561)	(1.473)	(1.257)	(1.443)	(1.265)
Seat-based power (reserved seat)		(1.501)	(1.470)	-0.391***	-0.235**	-0.305***
Jear-based power (reserved sear)				(0.103)	(0.102)	(0.078)
Constant	3.034***	2.785***	3.589	3.979	2.795	3.987
Ouistant	(0.359)	(0.588)	(2.976)	(2.916)	(3.027)	(3.191)
GP fixed effects	X	X	X	X	X	X
N	111.000	111.000	110.000	110.000	110.000	110.000
r2	0.651	0.696	0.723	0.746	0.696	0.754

Note: 1. This table displays the results of OLS regressions regarding the relationship between the dishonesty concession and peer effects, social-image effects, and power asymmetry effects. 2. The peer effect variable is the "Group Partner Die Count". 3. The social-image concern variable includes gender, age, and political party affiliation in Columns 2. 4. The social-image concern variable includes gender, age, level of education, religion, caste, political party affiliation, reserved seat status in Columns 3-6. 4. Power asymmetry variables include gender, age-, religion, cast, party-, and reserved seat-based power in Column 6. 5. GP fixed effects are included. 6. Standard errors are clustered at the GP level.

Table 3: The determinants of dishonesty concession  $(R_i - \gamma_i, Poisson)$ 

	(1) Peer effect only	(2) w/ social image effect (male)	(3) w/ social image effect (all)	(4) w/ power asym effect (reserve)	(5) w/ power asym effect (reserve&bothmale)	(6) w/ power asym effect (all)
Group partner dice count	0.010***	0.011***	0.011***	0.006**	0.008**	0.010***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Own dice count	-0.057***	-0.056***	-0.057***	-0.051***	-0.054***	-0.054***
	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)
Male (own)		-0.081***	-0.105***	-0.127***		-0.123***
		(0.022)	(0.026)	(0.029)		(0.034)
Male (other)		-0.052**	-0.076***	-0.096***		-0.100***
		(0.022)	(0.029)	(0.030)		(0.031)
Both male		0.074**	0.113***	0.145***	-0.015	0.143***
		(0.032)	(0.042)	(0.041)	(0.016)	(0.045)
Below average age (own)		0.010	0.010	0.031*	0.019	0.029*
		(0.014)	(0.022)	(0.017)	(0.022)	(0.015)
Below average age (other)		0.009	0.027	0.043**	0.028	$0.035^{*}$
		(0.026)	(0.024)	(0.021)	(0.027)	(0.021)
Both below average age		-0.049	-0.060	-0.088**	-0.043	-0.082**
		(0.036)	(0.050)	(0.038)	(0.052)	(0.035)
AITC party (own)		0.022	0.011	-0.011	0.010	-0.011
		(0.036)	(0.030)	(0.028)	(0.027)	(0.025)
AITC party (other)		0.056**	0.043	0.026	0.058**	0.020
		(0.026)	(0.035)	(0.033)	(0.023)	(0.032)
Both aitc party		-0.029	-0.005	0.013	-0.038	0.016
		(0.076)	(0.070)	(0.060)	(0.069)	(0.056)
Seat-based power (reserved seat)				-0.022***	-0.013**	-0.018***
				(0.005)	(0.005)	(0.003)
Constant	3.061***	3.049***	3.103***	3.121***	3.051***	3.120***
	(0.020)	(0.030)	(0.140)	(0.135)	(0.145)	(0.142)
GP fixed effects	Х	Χ	Χ	Χ	Х	Χ
N	111.000	111.000	110.000	110.000	110.000	110.000
r2_p	0.051	0.055	0.057	0.059	0.055	0.059

Note: 1. This table displays the results of Poisson regressions regarding the relationship between the dishonesty concession and peer effects, social-image effects, and power asymmetry effects. 2. The peer effect variable is the "Group Partner Die Count". 3. The social-image concern variable includes gender, age, and political party affiliation in Columns 2. 4. The social-image concern variable includes gender, age, level of education, religion, caste, political party affiliation, reserved seat status in Columns 3-6. 4. Power asymmetry variables include gender-, age, religion, cast, party-, and reserved seat-based power in Column 6. 5. GP fixed effects are included. 6. Standard errors are clustered at the GP level. 7. Since Poisson variables are strictly positive, we added a constant of 18 to our dishonesty concession variable  $\varkappa_{ijp}$  to generate a strictly positive dependent variable for all observations. This constant adjusted dishonesty concession is what we use in the Poisson regression reported here.

Table 4: The determinants of individual dishonesty  $(\delta_i)$ 

	(1)	(2)
	OLS	Poisson
Male (own)	0.351	0.095
	(0.355)	(0.091)
Below average age (own)	0.469	0.127
	(0.399)	(0.099)
Years of education (own)	0.090	0.025
	(0.092)	(0.023)
Hindu (own)	-1.182	-0.336
	(0.881)	(0.217)
AITC party (own)	-0.028	-0.008
	(0.408)	(0.097)
General Caste (own)	0.205	0.062
	(0.245)	(0.057)
Reserved seat (own)	0.069	0.021
	(0.595)	(0.157)
Uncontested seat (own)	-0.846	-0.240
	(1.104)	(0.283)
Constant	3.325**	1.199***
	(1.454)	(0.373)
GP fixed effects	Χ	Χ
N	114.000	114.000
r2	0.076	
r2_p		0.023

Note: 1. This table displays the results of OLS regressions regarding the relationship between an individual's own die count and a list of observable individual characteristics. 2. GP fixed effects are included. 2. Standard errors are clustered at the GP level.

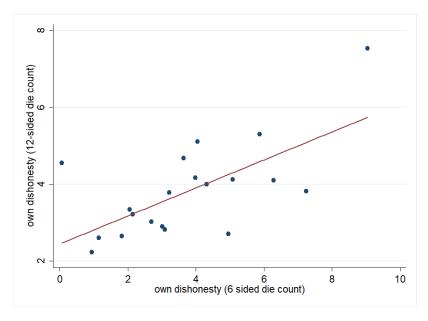
Table 5: The determinants of dishonesty concession  $(\delta_i)$ , quantile regression

	(1) 30th percentile	(2) median	(3) 70th percentile
	- Cour percentile		<u> </u>
Group partner dice count	0.165***	0.110***	0.176***
	(0.060)	(0.035)	(0.048)
Own dice count	-0.867***	-0.863***	-0.765***
	(0.084)	(0.063)	(0.082)
Male (own)	-1.000**	-2.137***	-2.353***
	(0.413)	(0.380)	(0.643)
Male (other)	-0.266	-1.397***	-1.647***
	(0.443)	(0.395)	(0.453)
Both male	0.903	2.329***	2.824***
	(0.651)	(0.501)	(0.976)
Seat-based power (reserved seat)	-0.278**	-0.242**	-0.235**
	(0.111)	(0.117)	(0.113)
Constant	2.645***	4.397***	4.176***
	(0.613)	(0.530)	(0.367)
GP fixed effects	X	Х	X
N	111.000	111.000	111.000
r2_p			

Note: 1. This table displays the results of quantile regressions (30%, median, 70%) regarding the relationship between the dishonesty concession and peer effects, social-image concerns, and power asymmetry effects. 2. The peer effect variable is the "Group Partner Die Count". 3. Gender-based social image concern controls are used. 4. Reserved seat power is used to account for power asymmetry between team participants. 5. GP fixed effects are included. 2. Standard errors are clustered at the GP level.

### Appendix figures and tables

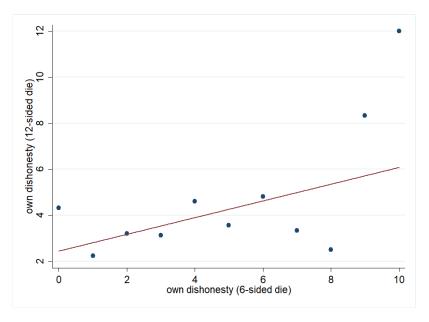
Figure A1: Binscatter plots of 6-sided and 12-sided die roll counts



Note: 1. This figure provides a binscatter plot of 6-sided and 12-sided die count. 2. GP fixed effect controls are included.

Source: authors' elaboration.

Figure A2: Binscatter plots of 6-sided and 12-sided die roll counts



Note: 1. This figure provides a binscatter plot of 6-sided and 12-sided die count. 2. GP fixed effect controls are not included.

Source: authors' elaboration.

Table A1: Frequency distribution of privately perceived social norms

	(1) Dictator takes all	(2) Bully takes all
Very socially inappropriate	95	108
Somewhat socially inappropriate	8	4
Somewhat socially appropriate	7	1
Very socially appropriate	6	4
Observations	116	117

Note: 1. This table displays the frequency distribution of the privately perceived social appropriateness of two hypothetical situations. 2. The "Dictator Takes All" scenario has the participant consider a situation where individual A reaps the entire endowment (Rs. 1000) while individual B is never made aware of this choice by individual A and receives nothing. 3. The "Bully Takes All" scenario has the participant consider a situation where individual A takes Rs. 500 from individual B, leaving B with nothing, while individual A gets Rs.1000.

Table A2: Validating die counts across die types (OLS, Poisson)

	(1) OLS	(2) OLS (GP FE)	(3) Poisson	(4) Poisson (GP FE)
Own die count (6-sided)	0.363**	0.365**	0.091***	0.093***
	(0.145)	(0.154)	(0.032)	(0.033)
Constant	2.450***	3.076***	0.976***	1.115***
	(0.488)	(0.529)	(0.126)	(0.137)
GP fixed effects	Х	Х	Х	X
N	118.000	118.000	118.000	118.000
r2	0.105	0.146		
r2_p			0.035	0.051

Note: 1. This table displays the results of OLS and Poisson regressions showing the relationship between individual 12-sided die count with 6-sided die count. 2. GP fixed effects are included in Columns 2 and 4. 3. Standard errors are clustered at the GP level.

Table A3: Validating die counts and private perception of social norms, multinomial logit

	(1)	(2)	(3)	(4)
	Dictator	Dictator	Bully	Bully
	takes all	takes all (GP FE)	takes all	takes all (GP FE)
Somewhat_socially_inappropriate				
Own die count	0.312	$0.334^{*}$	-0.501	-0.434
	(0.195)	(0.174)	(0.356)	(0.305)
Constant	-3.699***	-3.242***	-1.909**	-18.563***
	(1.109)	(0.876)	(0.880)	(1.212)
Somewhat_socially_appropriate				
Own die count	0.552***	0.711***	0.058***	0.154***
	(0.119)	(0.156)	(0.014)	(0.016)
Constant	-5.087***	-22.806***	-4.904***	-21.761***
	(0.442)	(1.597)	(0.999)	(1.057)
Very_socially_appropriate				
Own die count	0.420**	$0.408^{*}$	-0.108	-0.144
	(0.198)	(0.209)	(0.241)	(0.265)
Constant	-4.516***	-3.656***	-2.919***	-19.344***
	(1.010)	(1.160)	(0.983)	(1.271)
GP fixed effects	Х	Х	Х	Х
N	116.000	116.000	117.000	117.000
r2				
r2_p	0.093	0.249	0.039	0.305

Notes. 1. This table displays the results of multinomial logit regression showing the relationship between the participant's first stage die count (6-sided) and her private assessment of the social appropriateness of the "Dictator Takes All" and the "Bully Takes All" scenarios. 2. The "Dictator Takes All" scenario has the participant consider a situation where individual A reaps the entire endowment (Rs. 1000) while individual B is never made aware of this choice by individual A and receives nothing. 3. The "Bully Takes All" scenario has the participant consider a situation where individual A takes Rs. 500 from individual B, leaving B with nothing, while individual A gets Rs.1000. 4. GP fixed effects are included in Columns 2 and 4. 5. Standard errors are clustered at the GP level. 6. The base outcome category is "Very Socially Inappropriate".

Table A4: Effects of gender- and caste-based power on dishonesty concession ( $R_i - \gamma_i$ , Poisson)

	(1)	(2)	(3)	(4)
	Social image effect only b/se	Power asymmetry effect only b/se	Both effects b/se	Both effects (with reserve b/se
dno_6_pair_positive	5/00	5/00	5/00	5/00
Group partner dice count	0.010***	0.010**	0.015***	0.008**
croup partitor also source	(0.003)	(0.005)	(0.004)	(0.003)
Own dice count	-0.056***	-0.056***	-0.061***	-0.053***
	(0.004)	(0.006)	(0.006)	(0.004)
Male (own)	-0.085***	(51555)	-0.093***	-0.109***
,	(0.023)		(0.033)	(0.035)
Male (other)	-0.056**		-0.074**	-0.090***
(	(0.024)		(0.033)	(0.035)
Both male	0.083**		0.097**	0.125***
	(0.036)		(0.044)	(0.043)
Below average age (own)	0.008		0.015	0.031**
, ,	(0.014)		(0.011)	(0.012)
Below average age (other)	0.014		0.009	0.027
5 5 C ,	(0.023)		(0.022)	(0.021)
Both below average age	-0.053 <sup>*</sup>		-0.055* <sup>*</sup> *	-0.075***
	(0.031)		(0.027)	(0.032)
Hindu (own)	0.035		0.029	0.021
,	(0.065)		(0.064)	(0.056)
Hindu (other)	0.033		0.019	0.014
,	(0.068)		(0.075)	(0.061)
Both Hindu	-0.039		-0.027	0.002
	(0.082)		(0.088)	(0.085)
AITC party (own)	0.024		0.022	-0.002
, , ,	(0.040)		(0.034)	(0.029)
AITC party (own)	0.061*		0.051	0.032
. , ,	(0.035)		(0.035)	(0.029)
Both AITC party	-0.036		-0.028	-0.004
, ,	(0.085)		(0.079)	(0.061)
General Caste (own)	-0.028		-0.031	-0.052
,	(0.032)		(0.031)	(0.039)
General Caste (other)	-0.007		-0.016	-0.062*
,	(0.026)		(0.029)	(0.034)
Both General Caste	0.003		0.008	0.033
	(0.049)		(0.045)	(0.044)
Gender-based power (male)		-0.013	-0.004	-0.006
		(0.011)	(0.007)	(800.0)
Age-based power (older)		-0.003	0.000	-0.000
		(0.005)	(0.005)	(0.004)
Religion-based power (Hindu)		0.008*	0.017**	0.008
		(0.005)	(0.008)	(800.0)
Party-based power (AITC)		0.030*	0.022	0.017
		(0.017)	(0.020)	(0.018)
Caste-based power (General Caste)		0.006*	0.013**	0.006
•		(0.004)	(0.006)	(0.007)
Reserved seat (own)			•	-0.037
				(0.032)
Reserved seat (other)				-0.046
				(0.032)
Both reserved seats				0.009
				(0.041)
Seat-based power (reserved seat)				-0.018* <sup>*</sup> *
•				(0.004)
Constant	3.043***	3.061***	3.064***	3.152***
	(0.078)	(0.019)	(0.073)	(0.062)
GP fixed offects	X	X	X	X
GP fixed effects N	X 111.000	X 111.000		X 111.000
	0.055		111.000	
r2_p	0.055	0.053	0.057	0.058

Note: 1. This table displays the results of Poisson regressions regarding the relationship between the dishonesty concession and peer effects, social-image concerns, and power asymmetry effects. 2. The peer effect variable is the "Group Partner Die Count". 3. The social-image concern variable includes gender, age, earnings, and the level of education in Columns 3-6. 4. Power asymmetry variables include age-, gender-, reserved seat-, and contested-seat power in Column 6. 5. GP fixed effects are included. 7. Standard errors are clustered at the GP level. 8. Since Poisson variables are strictly positive, we added a constant of 18 to our dishonesty concession variable  $x_{ijp}$  to generate a strictly positive dependent variable for all observations. This constant adjusted dishonesty concession is what we use in the Poisson regression reported here.

Table A5: The determinants of dishonesty concession ( $R_i - \gamma_i$ , OLS)

	(1)	(2)	(3)	(4)	(5)	(6)
	Peer	w/ social	w/ social	w/ power	w/ power	w/ power
	effect	image effect	image effect	asym effect	asym effect	asym effect
	only b/se	(male) b/se	(all) b/se	(reserve) b/se	(reserve&bothmale) b/se	(all) b/se
Group partner dice count	0.178**	0.197***	0.212***	0.133**	0.151**	0.213***
and a part of the second	(0.057)	(0.053)	(0.047)	(0.047)	(0.060)	(0.063)
Own dice count	-0.962***	-0.946* <sup>*</sup> *	-0.985* <sup>**</sup>	-0.873* <sup>*</sup> *	-0.920* <sup>*</sup> *	-0.967* <sup>*</sup> *
	(0.069)	(0.060)	(0.073)	(0.074)	(0.080)	(0.078)
Male (own)	, ,	-1.383**	-1.794* <sup>**</sup>	-2.182***	. ,	-2.141**
		(0.436)	(0.549)	(0.611)		(0.733)
Male (other)		-0.931**	-1.368*	-1.739**		-1.825**
		(0.411)	(0.609)	(0.605)		(0.668)
Both male		1.310*	2.029**	2.570**	-0.220	2.552**
		(0.623)	(0.875)	(0.866)	(0.363)	(0.967)
Below average age (own)		0.185	0.182	0.494	0.301	0.457
		(0.278)	(0.440)	(0.308)	(0.432)	(0.289)
Below average age (other)		0.193	0.513	0.751	0.556	0.660
		(0.513)	(0.496)	(0.418)	(0.557)	(0.431)
Both below average age		-0.934	-1.069	-1.488*	-0.732	-1.443*
		(0.702)	(1.009)	(0.745)	(1.020)	(0.716)
AITC party (own)		0.312	0.115	-0.259	0.139	-0.175
		(0.725)	(0.615)	(0.575)	(0.561)	(0.547)
AITC party (own)		0.937	0.751	0.481	0.982*	0.431
		(0.527)	(0.727)	(0.689)	(0.466)	(0.692)
Both AITC party		-0.362	-0.016	0.306	-0.583	0.256
		(1.561)	(1.473)	(1.257)	(1.443)	(1.265)
General Caste (own)			-0.734	-1.110	-0.356	-1.020
			(0.819)	(0.863)	(0.845)	(0.843)
General Caste (other)			-0.779	-1.383	-0.416	-1.339
			(0.773)	(0.765)	(0.738)	(0.778)
Both General Caste			0.219	0.789	-0.121	0.757
11. 1 7			(1.010)	(1.030)	(1.182)	(0.964)
Hindu (own)			0.720	0.492	1.540	0.459
I.P. J. Zeller A			(1.204)	(1.169)	(1.748)	(1.323)
Hindu (other)			0.728	0.294	1.825	0.168
Balla I.P. J			(1.266)	(1.254)	(1.640)	(1.386)
Both Hindu			-0.641	0.259	-2.448	0.234
Decembed cost (as:)			(1.614)	(1.764)	(2.206)	(1.915)
Reserved seat (own)			-0.451 (0.776)	-0.805 (0.682)	-0.094	-0.550 (0.784)
Pacaryod coat (ather)			(0.776)	(0.682)	(0.922)	(0.784)
Reserved seat (other)			-0.695 (0.654)	-0.955 (0.570)	-0.384 (0.770)	-0.898 (0.730)
Both reserved seats			(0.654) -0.032	(0.579) 0.152	(0.779) -0.206	(0.739) 0.151
Both reserved seats			-0.032 (0.958)			
Years of education (own)			(0.958) 0.068	(0.846) 0.096	(1.158) -0.002	(0.921) 0.105
icais of education (OWII)			(0.094)	(0.096)	-0.002 (0.108)	(0.098)
Years of education (other)			-0.061	-0.031	-0.061	-0.043
icais of education (other)			(0.124)	(0.111)	(0.123)	-0.043 (0.119)
Both above average eduction			0.093	-0.208	0.858	-0.382
Don't above average eduction			(1.102)	(0.958)	(1.136)	(1.026)
Seat-based power (reserved seat)			(1.102)	-0.391***	-0.235**	-0.305***
Coal based power (reserved seat)				(0.103)	(0.102)	(0.078)
Constant	3.034***	2.785***	3.589	3.979	2.795	3.987
Constant	(0.359)	(0.588)	(2.976)	(2.916)	(3.027)	(3.191)
OD fived offer-t-						
GP fixed effects	X	X	X	X	X	X
N *2	111.000	111.000	110.000	110.000	110.000	110.000
r2	0.651	0.696	0.723	0.746	0.696	0.754

Note: 1. This table displays the results of OLS regressions regarding the relationship between the dishonesty concession and peer effects, social-image effects, and power asymmetry effects. 2. The peer effect variable is the "Group Partner Die Count". 3. The social-image concern variable includes gender, age, and political party affiliation in Columns 2. 4. The social-image concern variable includes gender, age, level of education, religion, caste, political party affiliation, reserved seat status in Columns 3-6. 4. Power asymmetry variables include gender-, age, religion, cast, party-, and reserved seat-based power in Column 6. 5. GP fixed effects are included. 6. Standard errors are clustered at the GP level.

Table A6: The determinants of dishonesty concession ( $R_i - \gamma_i$ , Poisson)

	(1) Peer effect only	(2) w/ social image effect (male)	(3) w/ social image effect (all)	(4) w/ power asym effect (reserve)	(5) w/ power asym effect (reserve&bothmale)	(6) w/ power asym effect (all)
Group Partner Dice Count	0.010***	0.011***	0.011***	0.006**	0.008**	0.010***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Own Dice Count	-0.057***	-0.056***	-0.057***	-0.051***	-0.054***	-0.054***
	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)
Male (own)		-0.081***	-0.105***	-0.127***		-0.123***
<b>M</b> 1 ( )		(0.022)	(0.026)	(0.029)		(0.034)
Male (other)		-0.052**	-0.076***	-0.096***		-0.100***
Date Mala		(0.022)	(0.029)	(0.030)	0.015	(0.031)
Both Male		0.074**	0.113***	0.145***	-0.015	0.143***
Dalam and and (ama)		(0.032)	(0.042)	(0.041)	(0.016)	(0.045)
Below average age (own)		0.010	0.010	0.031*	0.019	0.029*
Delevi everes ese (ether)		(0.014)	(0.022)	(0.017)	(0.022)	(0.015)
Below average age (other)		0.009	0.027	0.043**	0.028	0.035*
Dath halaw average age		(0.026)	(0.024)	(0.021)	(0.027)	(0.021)
Both below average age		-0.049	-0.060	-0.088**	-0.043	-0.082**
AITC Dorty (cure)		(0.036)	(0.050)	(0.038)	(0.052)	(0.035)
AITC Party (own)		0.022	0.011	-0.011	0.010	-0.011 (0.035)
AITC Porty (own)		(0.036) 0.056**	(0.030)	(0.028) 0.026	(0.027) 0.058**	(0.025) 0.020
AITC Party (own)			0.043	(0.033)		
Both AITC Party		(0.026) -0.029	(0.035) -0.005	0.033)	(0.023) -0.038	(0.032) 0.016
Both Arro Farty		(0.076)	(0.070)	(0.060)	(0.069)	(0.056)
General Caste (own)		(0.076)	-0.043	-0.064	-0.021	-0.057
General Gaste (GWII)			(0.039)	(0.040)	(0.041)	(0.040)
General Caste (other)			-0.040	-0.075**	-0.020	-0.073*
deficial daste (other)			(0.037)	(0.038)	(0.037)	(0.037)
Both General Caste			0.019	0.053	-0.001	0.049
Both General Caste			(0.051)	(0.051)	(0.060)	(0.049
Hindu (own)			0.031)	0.016	0.082	0.048)
Tillida (OWII)			(0.060)	(0.058)	(0.087)	(0.061)
Hindu (other)			0.021	-0.001	0.088	-0.004
Timaa (otrier)			(0.062)	(0.061)	(0.081)	(0.065)
Both Hindu			-0.012	0.039	-0.122	0.032
Dott i midd			(0.078)	(0.083)	(0.106)	(0.089)
Reserved seat (own)			-0.032	-0.056	-0.014	-0.042
riodor vod dodi (own)			(0.039)	(0.035)	(0.046)	(0.038)
Reserved seat (other)			-0.042	-0.056**	-0.023	-0.053
riodor vod doda (ourior)			(0.031)	(0.028)	(0.038)	(0.034)
Both reserved seats			0.007	0.022	0.000	0.019
			(0.046)	(0.041)	(0.055)	(0.043)
Seat-based power (reserved seat)			(- 3)	-0.022***	-0.013**	-0.018***
				(0.005)	(0.005)	(0.003)
Constant	3.061***	3.049***	3.103***	3.121***	3.051***	3.120***
	(0.020)	(0.030)	(0.140)	(0.135)	(0.145)	(0.142)
GP fixed effects	Х	X	X	X	X	X
N	111.000	111.000	110.000	110.000	110.000	110.000
r2_p	0.051	0.055	0.057	0.059	0.055	0.059

Note: 1. This table displays the results of Poisson regressions regarding the relationship between the dishonesty concession and peer effects, social-image effects, and power asymmetry effects. 2. The peer effect variable is the "Group Partner Die Count". 3. The social-image concern variable includes gender, age, and political party affiliation in Columns 2. 4. The social-image concern variable includes gender, age, level of education, religion, caste, political party affiliation, reserved seat status in Columns 3-6. 4. Power asymmetry variables include gender-, age, religion, cast, party-, and reserved seat-based power in Column 6. 5. GP fixed effects are included. 6. Standard errors are clustered at the GP level. 7. Since Poisson variables are strictly positive, we added a constant of 18 to our dishonesty concession variable  $\kappa_{ijp}$  to generate a strictly positive dependent variable for all observations. This constant adjusted dishonesty concession is what we use in the Poisson regression reported here.