Guilt and Antisocial Conformism: Experimental Evidence from Bangladesh

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Abstract

This study conducted a lab-in-the-field experiment in rural Bangladesh to disentangle motives for conformity in antisocial behavior. In a take-away game, the previous participants' choice is revealed before a decision is made. Conformism is measured by the correlation between the information and own choice. This design allows conformism via learning about social norms, changing social preference, and changing the belief about the opponent's expected amount of take-away. To disentangle the effect of belief, the participants in the treatment group are also informed about the opponent's expected amount to be taken away. The results show conformism only in the control group, suggesting the channel through the belief. These results are consistent with the broken windows theory and also support the relevance of belief-dependent social preference in decision making.

JEL Codes: C91; C93; K42
Keywords: Conformism; guilt aversion; belief-dependent preference; antisocial behavior; broken windows theory

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1. Introduction

Conformism is a basic aspect of human behavior. In particular, mounting evidence suggests conformism in antisocial behavior, such as theft, violence, substance use, underage drinking, smoking, and cheating in class (Bayer et al., 2009; Gaviria and Raphael, 2001; Glaeser et al., 1996; Kremer and Levy, 2008; Lundborg, 2006; Patacchini and Zenou, 2008, 2012; Zenou, 2003). Since it causes an astoundingly high disparity of socio-economic consequences across regions with seemingly comparable characteristics, it is essential for policymakers to have effective policies to mitigate antisocial conformism.

Although researchers have long studied this issue, the existing literature leaves two issues unaddressed. First, there is no consensus on whether conformism indeed exists, given that some empirical studies provide counterevidence (Dahl and DellaVigna, 2009; Ludwig and Kling, 2007). This mixed empirical evidence is partly derived from the difficulties in identifying conformism using observational data (Manski, 1993, 2000), which highlights the importance of additional studies using experimental approaches, such as those employed by Falk and Fischbacher (2002) and Keizer et al. (2008). Second, various mechanisms exist for the occurrence of conformism, such as strategic complementarity, extrinsic incentive, change in preference, and change in belief (see section 3 for details). However, which of these particularly explain the behavioral pattern is largely unexplored.

The present study bridges these gaps in the literature by experimentally examining whether and why people conform in antisocial behavior. Specifically, a take-away game is conducted in which a participant takes away their opponent's endowment. This study assumes that it is antisocial to take away a large amount to violate the 50–50 norm (Andreoni and Bernheim, 2009). This game is frequently used in the literature to manipulate antisocial behavior (Eichenberger and Oberholzer-Gee, 1998; Falk and Fischbacher, 2002; Schildberg-Hörisch and Strassmair, 2010), but a distinction of the experiment herein is that the participants are informed about previous participants' behavior before making their decision. This study elicits the extent of conformism through the correlation between their behavior and that of previous participants.

This experimental design allows conformism to occur via three channels. First, the participants learn about social norms by knowing the others' behavior. Second, it changes individual social preferences. Third, it changes own belief about how much the opponent expects to be taken away by the participant. Belief-dependent social preferences, such as guilt aversion (Charness and Dufwenberg, 2006), predict that this affects the utility loss of taking away a large amount. To disentangle the third channel from the others, the participants in the treatment group are additionally informed about the opponent's expected amount to be taken away, so that the conformism in this group is not driven by the third channel.

The results show conformism for the control group but not for the treatment group, supporting the channel through the change in belief but not through the other channels. This means that the participants take away more as the other participants take away a larger amount, because they believe that their opponent should also expect a larger amount of take-away in such a situation. Therefore, they do not experience a utility loss even by taking away a large amount. These results also support the relevance of belief-dependent social preferences.

This study is closely related to studies such as Falk and Fischbacher (2002), Fatas et al. (2018), Shang and Croson (2009), and Zafar (2011), who experimentally examine conformity in prosocial/antisocial behavior. A distinction of the current study is that it disentangles the underlying motives. Gächter et al. (2013) also disentangle two mechanisms of peer effects, social preference and social norms, but they do not argue the effect through the change in belief. This is important for two reasons. First, existing studies have argued whether heterogeneity in the behavior of individuals is caused by heterogeneity in beliefs or preferences (Ellingsen et al., 2012; Fehr and Hoff, 2011; Fischbacher and Gächter, 2010; Vanberg, 2008). This study contributes to this aspect of the literature. Second, the broken windows theory proposed by Kelling and Wilson (1982) and Wilson and Kelling (2003) is frequently discussed among sociologists and criminologists to explain the conformism in crimes. This theory argues the conformity through the change in belief, but previous evidence for this theory, such as Keizer et al. (2008), does not rigorously test the role of beliefs.[1] Therefore, to the best of the author's knowledge, this is the first study to test the validity of this aspect of the theory.

Finally, it is particularly insightful to study the antisocial behavior in developing countries such as Bangladesh, since such countries have long grappled with problems arising from ineffective law enforcement. Therefore, social norms and social preferences are expected to play significant roles in mitigating antisocial behavior in such areas.

The remainder of the paper is structured as follows. The next section describes the experimental design. Section 3 formalizes the testable hypotheses. Section 4 presents the results, and concluding remarks are presented in section 5.

2. Experimental Design

2.1. Procedure and Participants

The study site is the Satkhira district in southwestern Bangladesh. A household survey was conducted with 285 randomly selected households in 16 rural villages (18 households per village) in December 2010.[2] After completion of the survey, the survey enumerators invited the households to participate in the experiment to be conducted eight months later and informed them about the reward payment for their cooperation in the survey.

In August 2011, the experiment was conducted at the local government offices. A total of 36 surveyed households from two villages were invited per day, and the experiment was conducted over eight days. A total of 279 out of the 285 surveyed households participated in the experiment.[3] On each experiment day, half the participants

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[1] It argues that if a neighborhood ignores the incidence of petty crime, such as broken windows, potential criminals would anticipate that the neighborhood does not care about crimes, which in turn would lead to crimes that are more serious.

[2] Specifically, the survey was conducted in the Kaliganj and Ashashoni subdistricts. In the sampling of surveyed households, two unions were first randomly sampled from each sub-district. "Union" is an administrative unit in Bangladesh. Each union includes multiple villages. In the next stage, four villages from each union and one cluster from each of the villages were randomly selected. Finally, 18 households from each cluster were chosen. Of the total households sampled, 285 participated in the household survey.

[3] In order to assure the sample size, I did not randomly select the experiment participants within households. In cases in which the household head was not available, the next senior person representing the household (usually the spouse or son) was recruited to maintain the sample size.

(nine from each village) were randomly chosen and allocated to room C. The remaining participants were allocated to room T. The participants in room C were further divided into participants for even- and odd-numbered experiment days. Thus, the participants were randomly divided into three groups: the treatment group (N=137) in room T, the control group (N=71) in room C, and the remaining (N=71) in room C. However, this study does not use the data from the third group because they participated in different games. Therefore, the final sample size is 208.

Participants played six games, as summarized in Table A1: two sessions of take-away games, dictator game, trust game with hidden action, risk preference game, and trust game with complete information. However, this study uses only the results of the take-away games.[4] After finishing all the games, each participant received their payoff from only one randomly selected decision. Therefore, they did not know the decision from which they received the payoff and were aware that each participant had earned money from a different decision. This is important for two reasons. First, it alleviates the correlation of choices within participants across games due to the wealth effect. Second, if participants were to earn money from all games and discuss the payoffs after the experiment, they may have been able to infer the choices of the other participants. This would have violated participant anonymity, potentially affecting behavior.

Online Appendix A presents a further description about the experiment implementation, such as the issues of information spillover and participants' comprehension, is presented in Online Appendix A.

2.2. Take-away Game

This study uses a take-away game (gangster game) to replicate antisocial behavior in an experimental setting. This game is played anonymously by a pair of participants matched randomly: Player A and Player B. At the beginning of the game, experimenters give 400 Bangladeshi Taka (BDT) to Player A. While Player B receives nothing initially, he/she can take away 0, 50, 100, 150, 200, 250, 300, 350, or 400 BDT from Player A. Player A cannot control the endowment from Player B. Therefore, if Player B decides to take away x amount, the material payoff of Player A is $400–x$ and that of Player B is x. The maximum amount of payoff from this game is 400 BDT which is equivalent to about four days' worth of income in the study area. Online Appendix B presents the script of the experiment.

Session 1

This study conducted two sessions of the take-away game. The first session applied the strategy method regarding the role of the participants, so that all participants made decisions as both Player A and B.[5] They were asked the following two questions:

[4] Using the results of trust game with complete information, the risk preference game, and the household survey, Shoji (2018) demonstrates that the incentive for risk sharing between villagers, characterized by the negative correlation of incomes, is positively associated with their experimentally elicited trust. Shoji (2020) uses the results of the trust game with hidden action to elicit villagers' guilt sensitivity. He shows that those with higher sensitivity are more likely to repay loans and have better access to credit.

[5] Although the strategy method has some potential concerns, Brandts and Charness (2011) claim (based on a large number of previous studies) that the results of the strategy

(T1-1) *Suppose you are Player **B**. How much money will you take away from Player A?*
(T1-2) *Suppose you are Player **A**. How much money do you think Player B will take away from you?*

The first question elicits the antisocial behavior, x, while the second question captures Player A's belief about the choice of Player B, denoted by τ^A.[6]

Session 2
The pairs were also randomly matched in the second session. In this session, each participant was asked about the choice as Player B only, and the experimental design was changed slightly. For the control group in room C, the experimenters informed each participant about the amount the participants in the previous days took away from their paired Player A, denoted by x^P, as follows:

(T2-1) You *are chosen as Player B. Some participants in the previous days took away about _________ BDT, and Player A paired with you also knows this. How much money will you then take away?*

Regarding the informed amount, since most participants chose to take away 100, 200, or 300 BDT, one value was randomly chosen with equal probability for each participant.[7] Therefore, each participant within the experiment room received different information. Player B decides x conditional on the information x^P.

On the other hand, for the treatment group in room T, the experimenters informed each participant about x^p and the paired Player A's belief about x, as follows:

(T2-2) *You are chosen as Player B. Some participants in the previous days took away about _________ BDT, and Player A paired with you also knows this. Additionally, Player A anticipates that you will take away _________ BDT. How much money will you then take away?*

Regarding the information about Player A's belief, I use the amount elicited in (T1-2) from the paired participant τ^A.

2.3. Measures

Antisocial Behavior
In previous studies, amount x is considered to be a proxy for antisocial behavior (Eichenberger and Oberholzer-Gee, 1998; Falk and Fischbacher, 2002; Schildberg-

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and direct-response methods are comparable.

[6] Belief-elicitation experiments usually reward accuracy of stated beliefs in addition to payments for other decisions, but this study does not, given that recent studies suggest that this approach potentially affects participants' incentive in a different way (Blanco et al., 2010; Gächter and Renner, 2010).

[7] On the previous day to start the experiment, the same experiments were conducted with non-randomly recruited participants. I used this result for the peer information to the participants on the first experiment day.

Hörisch and Strassmair, 2010). However, since taking money is in fact allowed in the experiment, the decision rule to take money in this game may be different from the one to commit antisocial behavior in the field. Furthermore, Player B may think of the endowment as an unexpected gift from the experimenters to Player A, and therefore, consider equal allocation, namely the 50–50 norm, as appropriate (Andreoni and Bernheim, 2009). This is likely because the households of both Player A and B participated in the household survey prior to the experiment. Therefore, they may believe that they deserve to keep some of the payoff as a reward for the survey.

Given this argument, I use the binary indicator for violation of the 50–50 norm ($x > 200$) to approximate antisocial behavior. For robustness, I also use the amount taken over the 50–50 norm, that is, $\max\{0, x\text{-}200\}$, as an alternative measure.

Conformism

In line with previous studies (Chen et al., 2010; Fatas et al., 2018; Sasaki, 2019; Zafar, 2011), conformism is measured by the correlation between x^p and x.

3. Conceptual Framework and Testable Hypothesis

3.1. Motives for Take-Away

The amount of take-away is determined by various motives in addition to self-interest. The first is outcome-based social preferences, such as pure altruism and inequity aversion. The second determinant is social norms, defined as collectively recognized rules of conduct that prescribe socially acceptable behavior in a given situation (López-Pérez, 2008). Participants take away a smaller amount when intrinsic motivation to follow the social norms, such as self-image, is stronger. Third, belief-dependent social preferences, such as guilt aversion, also cause people to be prosocial.

The guilt aversion preference of Charness and Dufwenberg (2006) considers that an individual experiences a utility loss if they believe their behavior falls short of someone's expectation and lets the latter down. In the context of the take-away game, Player B feels guilty if they believe that they take away more than what Player A expects. This feeling of guilt is interpreted as guilt aversion. Suppose τ^A represents Player A's expectation about x. Then, the excess amount Player B takes away is indicated by $\max\{x–\tau^A, 0\}$. Since τ^A is unobservable for Player B, they do not know by exactly how much their choice lets Player A down. Hence, they make decisions based on their expectation about τ^A, which is denoted by τ^B. In other words, τ^A and τ^B are the first- and second-order beliefs about x, respectively. Therefore, $\max\{x–\tau^B, 0\}$ indicates how much Player B believes they let Player A down by taking away as much as x. The utility function of Player B with the guilt averse preference can be described as follows:

$$u = x – g \max\{x–\tau^B, 0\} \quad (1)$$

where g represents the unwillingness to fall short of Player A's expectation (guilt sensitivity parameter). In this formula, the optimal level of x is 400 BDT if g is less than 1 and τ^B otherwise. This leads to the prediction that x increases with an increase in τ^B and a decrease in g.

Previous studies provide evidence on the relevance of guilt aversion from the laboratory and the field. In particular, Shoji (2020) uses the experimental data collected from the same sample as this study to show that their behavioral pattern in the field is consistent with guilt aversion.[8]

3.2. Drivers of Conformism and Testable Hypothesis

The arguments in section 3.1 suggest that antisocial conformism occurs through three channels in this experiment. First, if the participants do not know the socially acceptable behavior, they may follow x^P because they assume it is socially acceptable. Second, both outcome-based and belief-dependent social preferences may become weak as x^P increases (Funk, 2005; Sliwka, 2007). In the context of guilt aversion preference, this channel indicates $\partial g/\partial x^P < 0$. Third, belief-dependent social preference causes conformism through the change in belief; the disutility from taking away a large amount may decrease with x^P because the participants believe that their opponents should also expect a large amount of take-away given x^P, that is, $\partial \tau^B/\partial x^P > 0$. Therefore, the participants believe that taking away a substantial amount should not let the opponents down.

In addition to these channels, strategic complementarity and extrinsic incentive to follow the social norms, such as disapproval by peers and a negative social image, may also cause antisocial conformism in the field behavior (Carpenter, 2004; Reyniers and Bhalla, 2013; Sah, 1991; Murphy et al., 1993; Rasmusen, 1996; Funk, 2005). However, these possibilities are ruled out in the current study's experiment. By nature, extrinsic incentives arise only when the individual's identity and actions are observable to others (Zafar, 2011). Therefore, this channel is ruled out because each participant is anonymously paired with a randomly selected opponent.[9] In addition, x^P does not affect the material payoff of Player A or B, ruling out strategic complementarity.

Furthermore, the treatment in the experiment disentangles the channel through the change in belief from the remaining channels. Since the participants in the control group receive the information on x^P only, the correlation between x and x^P captures the impact through the three channels. On the other hand, the participants in the treatment group receive the information on τ^A as well as x^P. This makes τ^A and τ^B coincide, and therefore, makes τ^B a random variable observable to researchers.[10] Since τ^B is randomly determined regardless of x^P, if a correlation is found in the treatment group it should be attributed to a channel different from the change in τ^B. Thus, the following testable hypotheses are established:

TESTABLE HYPOTHESIS:

(a) If conformism does not occur through any channels related with learning about socially acceptable behavior, changing preference, or changing belief, x should be uncorrelated with x^P in either group.

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[8] For experimental evidence see Charness and Dufwenberg (2006), Dufwenberg et al. (2011), Bellemare et al. (2011), Ellingsen et al. (2012), Battigalli et al. (2013), Beck et al. (2013), Khalmetski et al. (2015), Hauge (2016), and Khalmetski (2016). However, it should also be mentioned that some studies provide counterevidence (Ellingsen et al., 2010; Kawagoe and Narita, 2014; Vanberg, 2008).

[9] This experimental design may not fully rule out the roles of extrinsic incentive, given the fact that the researchers and experimenters can observe the choices of the participants. However, this effect may be ignored, according to Barmettler et al. (2012).

[10] The strategy to inform the first-order belief was first suggested by Ellingsen et al. (2010).

(b) If conformism occurs through changes in belief, x should be positively correlated with x^P only in the control group.
(c) If conformism occurs through the change in preference or learning about socially acceptable behavior, x should be positively correlated with x^P in both groups with the same magnitude.
(d) If conformism occurs through both channels, then a positive correlation should be found in both groups, and the magnitude of correlation should be larger in the control group.

To test the hypothesis, the following equation is estimated:

$$1[x_i > 200] = \alpha_0 + \alpha_1 x_i^{PC} + \alpha_2 x_i^{PT} + \alpha_3 T_i + \varepsilon_i \quad (2)$$

where x^{PC} (x^{PT}) denotes x^P reported to the participants in the control (treatment) group. It takes zero for the participants in the treatment (control) group. T_i is the indicator of the treatment group. Standard errors are clustered at the experiment day and room level. Since there are only 12 clusters, the OLS model is estimated to compute the wild bootstrap p-values of Cameron et al. (2008). In this specification, $\alpha_1=\alpha_2=0$ supports Hypothesis (a), $\alpha_1>0$ and $\alpha_2=0$ is consistent with (b), $\alpha_1=\alpha_2>0$ supports (c), and finally $\alpha_1>\alpha_2>0$ implies (d).

These empirical tests are valid even when the disutility of guilt in Equation (1) is nonlinear, for example, $u^B= x–g \max\{x–\tau^B, 0\}^\rho$ and $\rho>1$. Furthermore, we should additionally observe $\alpha_3>0$ in this case: obtaining the information on τ^A reduces the risk of letting them down. This increases the amount to take away on average.

4. Results

Table A2 presents the summary statistics of experimental results and participant characteristics. Before demonstrating the main result, a balance test is conducted. Specifically, the outcomes in the first session and participant characteristics are regressed on the independent variables of Equation (2). According to Table A3, none of the coefficients are statistically significant, confirming the validity of the experiment.

Figure 1 depicts the mean amount of x relative to the groups and the level of x^P. The average amount increases with x^P only in the control group. Column (1) of Table 1 presents the OLS results of Equation (2). In line with the pattern of Figure 1, it shows that, for the control group, an increase in x^P by 100 BDT significantly increases the likelihood of taking away more than 200 BDT by 10 percentage points. By contrast, x^P is not correlated with the behavior of the treatment group. The difference in the coefficients is statistically significant (p-value=0.084). These patterns lend support to part (b) of the hypothesis, that is, conformism driven by the changes in the belief. Finally, the coefficient of treatment group dummy is significantly positive. This could occur for two reasons. First, the disutility of guilt increases nonlinearly, as discussed in section 3. Second, Player B's expectation about Player A's belief regarding x was significantly lower ($\tau^A>\tau^B$), and the treatment group who updated their belief upward therefore took away more.

[Figure 1]

[Table 1]

In Column (2), I additionally control for τ^A. Following Greene (2018), this variable takes zero for the control group. The coefficient of x^P does not change because they are uncorrelated. Intriguingly, the coefficient of τ^A is significantly positive. An increase in τ^A

by 100 BDT increases the likelihood of taking away more than 200 BDT by 10 percentage points. This is consistent with the prediction of guilt aversion, but not with outcome-based preferences, such as pure altruism and inequity aversion. Further, Columns (3) and (4) control for the participant characteristics and the amount of take-away in the first session. The point estimates are stable across columns. For robustness, in Table A4 I also estimate the impact on the amount taken beyond the 50–50 norms, that is, $\max\{0, x\text{-}200\}$. The results do not differ qualitatively.

There may be concern about the possibility of alternative interpretations. First, the anchoring effect can also cause conformity in this setting (Tversky and Kahneman, 1974). Second, the experimenter demand effect may have caused participants to behave in a manner consistent with the prediction of conformism and guilt aversion. Third, the experimental behavior may also be influenced by the order effect because the participants played session 1 and the dictator game before playing the second session. Therefore, α_1 and α_2 in Equation (2) may capture these mixed effects. However, these alternatives cannot explain the difference in the coefficients between the groups.

5. Conclusion

This study examined whether and why people conform regarding antisocial behavior. Through an artifactual field experiment in rural Bangladesh, this study found evidence of conformism through the changes in the belief. These findings are consistent with the argument of broken windows theory, and also support the relevance of belief-dependent preferences.

Two possible policy implications may be derived from this study. The existence of conformism implies that communities benefit when law enforcement authorities monitor minor disorders. In addition, conformism caused by changes in beliefs indicate that those in crime-prone communities are tempted to commit crime only when they believe that others anticipate high risk of crime victimization. Therefore, those who grow up in crime-prone areas would not necessarily commit crime in other cities where residents anticipate lower risks. There is consistent empirical evidence that teenagers who move from poor and crime-prone neighborhoods to more affluent neighborhoods are less likely to commit violent crimes than those who stay in poor neighborhoods (Ludwig et al., 2001).

A limitation of this study is that the experimental design rules out the conformism through the strategic complementarity and extrinsic incentive. Therefore, the estimated degree of conformism is a lower bound of the conformism in the field. To draw conclusions regarding the behavioral mechanism of conformism, further studies are required.

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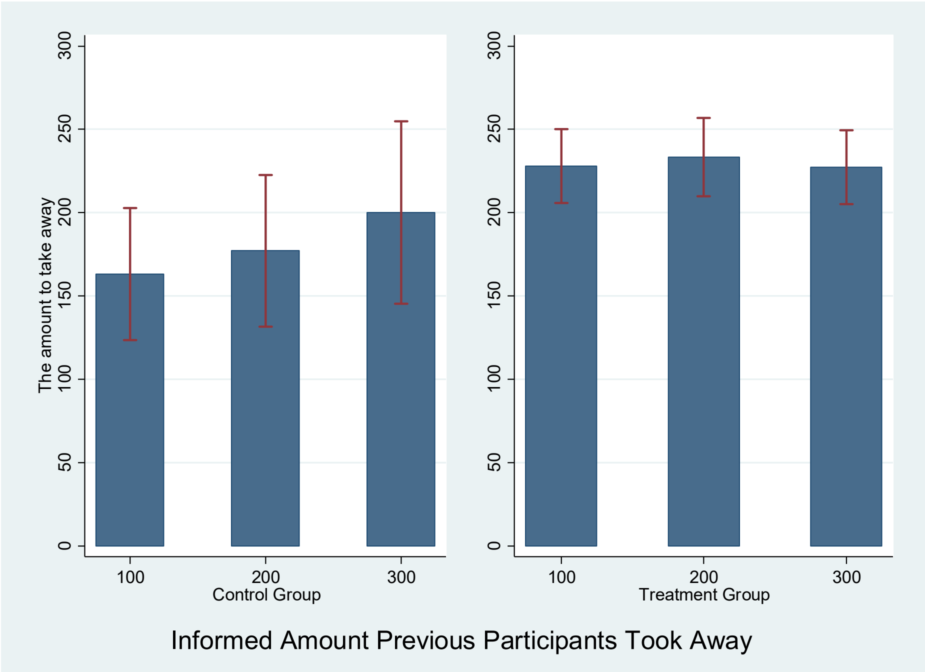

Note: The X-axis is x^P and the Y-axis is x. The mean and 90% confidence intervals are presented.

Fig. 1: Experimental Result

Table 1: Identifying Antisocial Conformism and its Channels

Dependent Variable: 1 if take away more than 200 in session 2

		(1)	(2)	(3)	(4)
x^{PC}	Previous participants' amount of take-away (Control)	0.0010*	0.0010*	0.0010***	0.0009**
		[0.066]	[0.066]	[0.008]	[0.040]
x^{PT}	Previous participants' amount of take-away (Treatment)	-0.0005	-0.0005	-0.0005	-0.0007
		[0.466]	[0.386]	[0.432]	[0.264]
T	1 if treatment group	0.3495*	0.0992	0.1170	0.1092
		[0.052]	[0.472]	[0.412]	[0.284]
τ^A	Player A's expected amount of take-away		0.0010**	0.0010**	0.0007*
			[0.026]	[0.044]	[0.096]
	Participant characteristics	No	No	Yes	Yes
	The amount of take-away in session 1	No	No	No	Yes
	F-test for $x^{PT} = x^{PC}$ (p-value is reported)	0.084	0.061	0.043	0.037
	Clusters	12	12	12	12
	Observations	208	208	208	208

The coefficients of OLS are reported. Standard errors are clustered at the experiment room and day level. Wild bootstrap p-values proposed by Cameron et al. (2008) are in brackets (500 bootstrap replications, with imposing the null hypothesis). *** p<0.01, ** p<0.05, * p<0.1.

Online Appendices

Online Appendix A: Implementation of Experiment

A1: Information spillover

A potential concern in a lab-in-the-field experiment conducted for multiple days is information spillover within and across villages. If the participants inform those who have not yet participated about the experimental setting, it may affect the behavioral pattern of the latter group of participants. This study avoided this problem as follows. First, all the participants from each village were invited to the session on the same day, ruling out the possibility of within-village spillover. Second, the participants were recruited from 16 villages in four unions (four villages from each union). I invited the participants from two villages in the same union per day, so that the experiments in each union finish within two days. Therefore, across-village spillover was unlikely, unless the participants on the first day provided those on the second day with information on the experiment immediately after their experiment. Finally, the survey unions are not adjacent, and therefore, it is not plausible to assume across-union spillover. Hence, the concern about information spillover was not considered to be severe.

A2: Participants' comprehension

Since the education level of participants is low, this study adopts the following procedure to ensure that the participants comprehended the instructions. First, after explaining the setting of game, experimenters asked participants a few questions. For example, they were asked how much payoff Player A and Player B would receive if Player B takes away 250 BDT. These checks were conducted orally at the experiment-room level. Second, after the comprehension questions, the participants were given the payoff matrix of the game and made decisions for opponents. Third, if they still did not understand the setting, they could ask the experimenters for help. Although the experimenters were allowed to read the script out loud again more slowly, they were prohibited from providing additional information that was not included in the script or from suggesting a particular choice.

The comprehension check may have been imperfect because the questions were not asked for each individual. However, the data suggest that poor comprehension is unlikely to be a severe problem for this sample. The amount of take-away in the first session was negatively correlated with the amount of transfer in the dictator game (rho= -0.135, p-value=0.051). Similarly, those who behaved antisocially in the take-away game were more likely to do so in the trust games as well.

Online Appendix B: Instructions of Experiment (Originally written in Bengali)

To implement the experiment, the Bengali version of the following script was read out by Bangladeshi experimenters. When the participants answered questions, they could use a payoff matrix to ascertain the payoff from each choice. The participants filled out the answer sheets themselves, but they could ask the experimenters for help if they wanted to. Although the experimenters were allowed to reread the script aloud more slowly for such participants, they were prohibited from providing additional information that was not included in the script or from suggesting a particular choice.

Welcome Speech

Thank you all for coming and for your cooperation in the last survey in January. We are also grateful for your cooperation today. We would like to offer an opportunity to make money. Today you play some games and earn money depending on the score you get in the games. There are 18 participants in this room and another 18 in the other room. The amount you receive depends on what you and the other participants do in the games. We want to emphasize that real money is at stake and we strongly recommend you to try to understand the games and play seriously as much as possible. It will take a total of 5 to 6 hours to play all games. After completing them, one of them will be chosen by rolling a die. You receive the money corresponding to your score in the selected game. Keep in mind that you receive money for only one game. The payment will be after completing all games. None of the other participants will know how much money you earn or what you do during the games. We will never tell anyone. To assure that your responses are confidential, we ask you not to talk about the games until all games are completed. If you follow this rule, we will give you 100 Tk each at the end of games as participation fee, in addition to the payoff in the games. However, if you talk to other participants or do not follow the rules in any other way, we will reduce the payment. If you do not wish to participate in the games for any reasons, you are free to leave now. Is there anybody who does not want to participate today?

Instruction for the Take-away Game (Sessions 1)

We are now starting the first game. This game is played by two people: Player A and Player B. Each of you is paired with somebody in the other room. You may be assigned to either Player A or Player B. The amount of money you can earn depends on what you and your paired participant will do in this game. As already mentioned, nobody can know who you are paired with. Also, none of the participants will get to know what you do in the game.

Here are the rules of the game. When the game starts, we give 400 BDT to Player A and nothing to Player B. However, Player B can take away any amount from Player A. This is the payoff for you. If you are chosen to be Player B, you earn as much as you take away from Player A. If you are chosen to be Player A, you will get the remaining amount, if any. Player A can do nothing to control the amount of money he/she is left with. [Show the answer sheet for T1-1, T1-2]

Questions

[T1-1] *Suppose you are Player **B**. How much money will you take away from Player A?*

[T1-2] *Suppose you are Player **A**. How much money do you think Player B will take away from you?*

Next, suppose you are Player A again. Imagine that the previous participants took away 100 BDT and Player B also knows this. Then, how much money do you think he/she will take away? [Show the answer sheet for T1-3 to T1-5] Please mark your guess on the right-hand side. Similarly, please fill out your guess considering that the previous participants took away 200 BDT and 300 BDT, respectively.

Questions

[T1-3] *Suppose you are chosen to be Player **A**. If the previous participants took away **100 BDT** and Player B also knows this, then how much do you think he/she will take away?*

[T1-4] *If the previous participants took away **200 BDT** and Player B also knows this, then how much do you think he/she will take away?*

[T1-5] *Finally, if the previous participants took away **300 BDT** and Player B also knows this, then how much do you think he/she will take away?*

Instruction for the Dictator Game

You are Player A and have 400 BDT, but this time, Player B cannot take away money from you. Instead, you can give some money to him if you wish. If you give nothing, his payoff is zero. If you give 100 BDT, he gets 100 BDT and you get 300 BDT. Keep in mind that your partner in this game should be different from the one in the last game.

Instruction for the Take-away Game (Session 2): Control group

We are starting the second session now. The rules are essentially the same as the first game. This time, you make a decision as Player B. When the game starts, we will give 400 BDT to Player A and nothing to you. You can take away any amount you wish from Player A. Keep in mind that your paired person in this game should be different from the one in the last game.

There is only one change in the rules. We conducted the same games previously as well. This time, before you make a decision, we will inform you and your paired participant how much the other participants took away from Player A in the previous days. Please consider this information, and answer how much money you will take away.

Here is the answer sheet [Show the answer sheet for T2-1]. The amounts the other participants took away are written on your sheet. Then, we ask you how much of the 400 BDT you will take away from Player A.

Question

[T2-1] *You are chosen as Player B. Some participants in the previous days took away about ________ BDT, and Player A paired with you also knows this. How much money will you then take away?*

Instruction for the Take-away Game (Session 2): Treatment group

We are starting the second session now. The rules are essentially the same as the first game. This time, you make a decision as Player B. When the game starts, we will give 400 BDT to Player A and nothing to you. You can take away any amount you wish from Player A. Keep in mind that your partner in this game should be different from the one in the last game.

There are two changes in the rules. First, we asked everybody to guess the take-away amount of Player B in the last game. In this game, before you make a decision, we will inform you how much money Player A expected Player B to take away. Second, we also inform you how much the other participants took away from Player A in the previous days. Please consider this information, and answer how much money you will take away.

Here is the answer sheet [Show the answer sheet for T2-2]. The amounts Player A anticipated and the amounts the other participants in the previous days took away are written on your sheet. Then, we ask you how much of the 400 BDT you will take away from Player A.

Question

[T2-2] *You are chosen as Player B. Some participants in the previous days took away about _______ BDT, and Player A paired with you also knows this. Additionally, Player A anticipates that you will take away ______ BDT. How much money will you then take away?*

Answer Sheet for Take Away (1)

Room_____ HH ID (2 digits)_____________ Village _______________
Day ________ Month_______

[1] Suppose you are Player B. How much money will you take away from Player A?

0	50	100	150	200	250	300	350	400

[2] Suppose you are Player A. How much money do you think Player B will take away from you?

0	50	100	150	200	250	300	350	400

[3] Suppose you are chosen to be Player A. If the previous participants took away BDT 100 and Player B also knows this, then how much do you think he/she will take away?
[4] If the previous participants took away BDT 200 and Player B also knows this, then how much do you think he/she will take away?
[5] Finally, if the previous participants took away BDT 300 and Player B also knows this, then how much do you think he/she will take away?

The amount the others took away	Your guess about your Player B								
100 Tk	0	50	100	150	200	250	300	350	400
200 Tk	0	50	100	150	200	250	300	350	400
300 Tk	0	50	100	150	200	250	300	350	400

[6] Suppose you are Player A. Suppose also that Player B cannot take away your money this time. However, you can give him some money, if you wish. Then, how much BDT will you give to him?

0	50	100	150	200	250	300	350	400

Payoff Matrix for Take Away (1) (2)

The amount Player B takes away (The amount Player A gives away)	Player A's payoff	Player B's payoff
0	*400*	*0*
50	*350*	*50*
100	*300*	*100*
150	*250*	*150*
200	*200*	*200*
250	*150*	*250*
300	*100*	*300*
350	*50*	*350*
400	*0*	*400*

Answer Sheet for Take Away (2) Control Group

Room_____ HH ID (2 digits)_____________ Village _______________
Day _______ Month______

Question

You are chosen as Player B. Some participants in the previous days took away about BDT _______, and Player A paired with you also knows this. How much money will you then take away?

Your decision

0	50	100	150	200	250	300	350	400

Answer Sheet for Take Away (2) Treatment Group

Room_____ HH ID (2 digits)_____________ Village _______________
Day _______ Month______

Question

You are chosen as Player B. Some participants in the previous days took away about BDT _______, and Player A paired with you also knows this. Additionally, Player A anticipates that you will take away BDT ______. How much money will you then take away?

Your decision

0	50	100	150	200	250	300	350	400

Table A1: Overview of Experiments and Tasks in Each Game

Tasks
Take away game (Session 1)
1. **Player B:** Only the opponent participant receives 400 BDT from the experimenter. Decide the amount to take away from him/her.
2. **Player A:** Receive 400 BDT from the experimenter. Guess the amount that the opponent will take away from the participant.
Dictator game
Receive 400 BDT from the experimenter. Decide the amount to transfer to the opponent.
Take away game (Session 2)
Player B (Control): Only the opponent participant receives 400 BDT from the experimenter. Decide the amount to take away from him/her after being informed about how much previous participants took away.
Player B (Treatment): Only the opponent participant receives 400 BDT from the experimenter. Decide the amount to take away from him/her after being informed about how much previous participants took away and how much the opponent expects the participant to take away.
Trust game with hidden action
Risk preference game
Trust game with complete information

All the participants played all the games, and in each game, they played all the roles. The results of only take away games are used in this study.

Table A2: Summary Statistics (N=208)

Variables	Mean	S.D.
Experiment data		
The amount to take away in session 1	255.53	131.07
1 if take away more than 200 in session 1	0.56	0.50
Expected amount to be taken away in session 1	251.44	115.67
The amount to take away in session 2	212.74	109.32
1 if take away more than 200 in session 2	0.39	0.49
Participant characteristics		
1 if participant is household head	0.51	0.50
1 if participant is male	0.68	0.47
Age of participant	35.44	13.89
Schooling years of participant	6.04	4.01

Table A3: Balance Test (N=208)

Dependent variables	x^{PT}		x^{PC}		T		Constant	
The amount to take away	-0.012	[0.886]	0.048	[0.698]	58.99	[0.340]	215.0***	[0.000]
1 if take away more than 200	-0.001	[0.170]	0.0001	[0.926]	0.20	[0.328]	0.49	[0.172]
Expected amount of take-away	0.110	[0.410]	0.005	[0.926]	16.87	[0.588]	225.8***	[0.000]
Household head	-0.0003	[0.482]	-0.0001	[0.826]	-0.05	[0.824]	0.60***	[0.000]
Male	0.0004	[0.510]	0.0001	[0.862]	-0.08	[0.636]	0.68***	[0.000]
Age	-0.008	[0.666]	-0.012	[0.974]	-5.89	[0.248]	41.14***	[0.000]
Schooling years	0.003	[0.550]	0.001	[0.818]	0.33	[0.904]	5.37***	[0.000]

The coefficients of OLS are reported. Standard errors are clustered at the experiment room and day level. Wild bootstrap p-values proposed by Cameron et al. (2008) are in brackets (500 bootstrap replications, with imposing the null hypothesis). *** p<0.01, ** p<0.05, * p<0.1.

Table A4: Identifying Antisocial Conformism and its Channels

Dependent Variable: The amount taken beyond the 50-50 norms in Session 2

		(1)	(2)	(3)	(4)
x^{PC}	Previous participants' amount of take-away (Control)	0.0040***	0.0040***	0.0044***	0.0048***
		(0.001)	(0.001)	(0.001)	(0.001)
x^{PT}	Previous participants' amount of take-away (Treatment)	-0.0007	-0.0007	-0.0007	-0.0019
		(0.001)	(0.001)	(0.001)	(0.001)
T	1 if treatment group	1.0458***	0.4631	0.5716	0.7577**
		(0.352)	(0.395)	(0.423)	(0.371)
τ^A	Player A's expected amount of take-away		0.0022***	0.0023***	0.0015
			(0.001)	(0.001)	(0.001)
	Participant characteristics	No	No	Yes	Yes
	The amount of take-away in session 1	No	No	No	Yes
	F-test for $x^{PT} = x^{PC}$ (p-value is reported)	0.0014	0.0012	0.0002	0.0001
	Clusters	12	12	12	12
	Observations	208	208	208	208

The coefficients of ordered probit are reported. Clustered standard errors at the experiment room and day level are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.