Culture and Colonial Legacy: Evidence from Public Goods Games[*]

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Abstract

We conduct a public goods game in three small towns in the Indian state of Rajasthan. Due to historical military conquest, until 1947 these towns were on (barely) opposite sides of a colonial border separating British India from the Princely States. Our research design offers a treatment comparison between the towns of (British) Kekri and (Princely) Sarwar, and a control comparison between (Princely) Sarwar and (Princely) Shahpura. We find that participants in (British) Kekri are more co-operative (i.e., contribute more) in both home-town and mixed-town groups compared to those in (Princely) Sarwar. The latter differences are driven by individuals with family ties to the towns, and we find no differences in the control comparison. Our results highlight the enduring effects of colonial rule on social norms of co-operation.

JEL Classifications: C91, C93, C71, H41, H73, N35, N45, O17, Z1
Keywords: cultural transmission, colonialism, public goods game, natural experiment, lab-in-the-field experiment, India

1 Introduction

Culture has long been one of the "black boxes" of economic analysis. We know it matters, but it is difficult to pin down theoretically and even more difficult to measure. While numerous recent studies have shown that culture affects economic outcomes and vice versa, much of the black box remains.[1] One important effect (and cause) of culture is its interaction with institutions: how does culture affect institutions, and conversely, how do formal institutions shape cultural norms and traits?[2] A primary difficulty in addressing such questions is identification: measuring institutions and culture is inherently difficult, as is finding credible instruments for either.[3] Three common solutions are: (1) exploiting large institutional changes such as the rise and fall of Communism in Eastern Europe (Alesina and Fuchs-Schündeln 2007); (2) historical accidents that offer opportunities for regression discontinuity (Grosfeld and Zhuravskaya 2015; Becker et al. 2016; Buggle 2016; Dupraz 2017); and (3) experiments (Fershtman and Gneezy 2001; Bigoni et al. 2016; Robinson 2016; Walker 2018; Karaja and Rubin 2019). Our paper contributes to this literature by combining a historical natural experiment with a "lab-in-the-field" experiment to study the effect of institutions on culture and cultural persistence.

We identify institutional causes of contemporary cultural differences within a region of India that was subject to different degrees of colonial rule. Specifically, we run lab-in-the-field experiments in towns barely separated by an old colonial border. The three towns—Kekri, Sarwar, and Shahpura—are located in the present state of Rajasthan. In the colonial period, the British annexed a small part of Rajasthan—Ajmer— which included Kekri near its border (see Figure 1). The other towns were part of Princely India (i.e., states where local autonomy remained with the ruler).

These were historically small towns with populations ranging from 4,000 to 9,000. They continue to remain small today with populations ranging from 20,000 to 40,000 in 2011. In the pre-colonial period, this part of central Rajasthan shared a common language, culture, and geography. Ajmer came under direct British rule in the early 19th century when the East India Company won an important battle against the Marathas (a Hindu state that emerged following the decline of the Mughal Empire). This led a Maratha leader to cede the territory of Ajmer province to the East India Company. The adjoining Princely States of Kishangarh (containing Sarwar) and Shahpura entered into treaties with the British whereby the British controlled their defense and foreign policy, but their local rulers managed internal administration.

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[1] See Guiso, Sapienza and Zingales (2006), Fernández (2011) and Nunn (2012) for excellent surveys of this literature.

[2] For recent works on the interactions between culture and institutions, see Alesina and Giuliano (2015), Giuliano and Nunn (2017), Bisin and Verdier (2017), and Iyigun et al. (2020).

[3] Exceptions include Tabellini (2010) and Nunn and Wantchekon (2011), among others. Beyond conventional IV complaints (Young 2017), instruments do not always shed light on the underlying channel of transmission.

Figure 1: Map of British and Princely India (modern Indian border), 1911
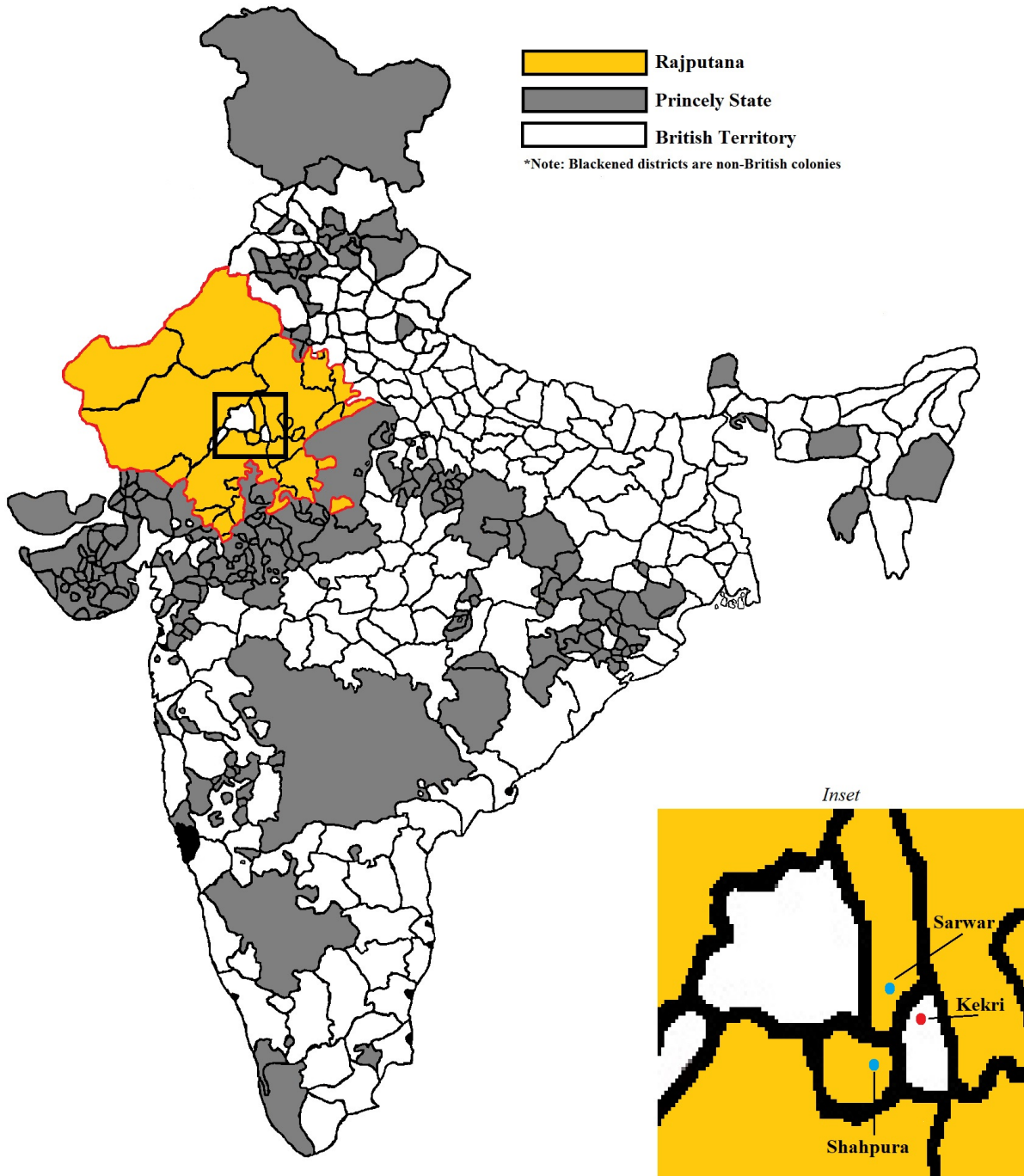
Source: *Government of India* (1911).

Historical records suggest the decision to bring Ajmer under direct colonial rule was the result of military success and the strategic location of Ajmer city, the capital. Commercial and agricultural reasons were

unimportant because this area was not agriculturally productive; it is near the Thar dessert, which is arid with low and unpredictable rainfall. Kekri, our experimental town, was on the southeastern edge of Ajmer province. By most accounts it was a small and inconsequential town that happened to come under direct colonial rule. That Kekri was (barely) placed in British territory was not a reflection of any specific military, economic, or political feature of Kekri. We can thus view the border between Kekri and nearby Sarwar and Shahpura as plausibly exogenous. In other words, a natural experiment arose in these towns: one was subject to British colonial rule for idiosyncratic reasons for well over a century, and the others were not.

There are numerous reasons we may expect, ex ante, that the colonial experience affected cooperative norms. For one, in Rajasthan at least, individuals living in British India experienced more formal taxation under the purview of urban municipal boards. Such institutions were absent in the Princely States we study. Moreover, subjects living in British India had a longer history of living with outsiders (British subjects). For these reasons (and more that we detail in Section 6), it is possible that subjects in British India had more cooperative norms, which also may have been affected by whether or not they were cooperating with "outsiders." To the extent that such historical experiences affected cooperative norms in the past, our experiment can identify whether such norms persist to the present day, although we cannot tease out which of the many possible mechanisms has contributed to these differences in norms.

Our experiment therefore tests whether (1) experiment participants from (British) Kekri are more cooperative in standard public good games than participants from (Princely) Sarwar; (2) whether the differences in cooperation are exacerbated when "outsiders" benefit from the good, and (3) if there are any differences, whether they are more apparent among participants with family ties to the town (i.e., those who did not move to the town in their lifetime). If cultural norms were passed from one generation to the next, it is likely that any inter-town differences are driven by individuals whose families lived there for multiple generations.

In our lab-in-the-field experiment, participants from each town played standard voluntary contribution mechanism public goods games (e.g., Isaac and Walker 1988a, 1988b; Anderson and Putterman 2006), paired with subjects from their own town and subjects from the other towns. Subjects in each town played three single-shot games. The games were identical, other than the group composition. Our research design offers a treatment comparison between participants in (British) Kekri and (Princely) Sarwar, and a control comparison between participants in (Princely) Sarwar and (Princely) Shahpura. If the salient boundary is between British India and Princely India, we should not find significant differences in contributions between (Princely) Sarwar and (Princely) Shahpura.[4]

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[4]Unfortunately, as we detail in Section 5, our samples from these experimental towns were different in a few socio-economic characteristics, including religion. We run numerous regressions and robustness checks to attempt to alleviate concern that our results are a consequence of these characteristics.

We summarize our findings as follows. First, we find that participants from (British) Kekri are more likely to cooperate (i.e., contribute higher amounts) in mixed groups compared to participants from (Princely) Sarwar. Kekri participants contribute 56% of their endowment to mixed town groups compared to 52% for Sarwar participants (p-value for difference in mean, $p = 0.07$). In both towns, the mixed groups include two people from their hometown and two people from the other town (Kekri or Sarwar). When we split the sample based on a participants' ties to their town, we find the inter-town differences are driven by individuals whose *parents are from the town*.

Second, we also ran mixed group experiments for participants in (Princely) Sarwar and (Princely) Shahpura. If the differences we observe between Kekri and Sarwar are driven by the colonial boundary, we would not expect to observe differences in contributions to mixed groups across the two Princely State towns. The results confirm that the relevant difference is between British and Princely India. We find no significant differences in contributions to mixed groups between (Princely) Sarwar and (Princely) Shahpura.

We confirm the findings in regressions that control for gender, caste, religion, occupation, and education of the participants. We also find similar inter-town differences between (British) Kekri and (Princely) Sarwar using other variables to capture family ties such as whether a participant lived their entire life in the town, or whether their grandparents are from the same town. Finally, we find similar results in individual fixed effects regressions where we compare the same individual's joint contribution to their mixed town group versus their home town group. Contributions to mixed town groups are lower than home town groups in both (British) Kekri and (Princely) Sarwar, but the difference is significantly larger for (Princely) Sarwar. Moreover, these results are driven by individuals with family ties to the town.

Taken together we interpret these results as evidence of historical institutions affecting contemporary cooperation via an inter-generational (vertical) transmission mechanism (although this is likely reinforced via horizontal and oblique transmission). This is suggested by the facts that the only salient differences in the decisions of the populations are: i) between those on opposite sides of the old colonial border; and ii) confined to those whose families are from the town and are therefore presumably imbued with the culture generated generations ago. We interpret the observed behavior as evidence of culture consistent with the standard definition of culture in economics by Guiso, Sapienza and Zingales (2006): "those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation."

Our paper contributes to three literatures. First, we contribute to the growing literature on culture and institutions where our focus is on the link from institutions to culture. In Putnam's (1993) classic study and the empirical follow-up by Guiso, Sapienza and Zingales (2016), Italian regions that were historically exposed to medieval free cities, an early form of democracy, have higher social capital today. On the contrary, Xue and Koyama (2018) find that Chinese prefectures that were subject to political repression in the 17th and 18th

centuries have lower social capital today. On a smaller time scale, Alesina and Fuchs-Schündeln (2007) find that East Germans favor redistribution and state intervention more than West Germans after reunification even though the two populations were largely uniform before the rise of Communism. Becker et al. (2016) find that people living within 200 kilometers of the former Habsburg Empire are more likely to trust state institutions.[5] In similar regression discontinuity studies, Peisakhin (2010) surveys 1600 individuals living on either side of an old Habsburg-Russian border and finds that the border continues to influence attitudes towards Russia today, while Dupraz (2017) finds that Cameroonians living in formerly-British controlled regions have better educational outcomes than those living in formerly-French controlled regions.[6]

Apart from evidence based on surveys and regression discontinuity, several experimental papers show how different economic conditions influence outcomes in lab games. For example, Herrmann et al. (2008) find different contributions in public good games across 16 cities around the world. Subjects in Boston, for instance, with a stronger rule of law are more cooperative and more likely to punish anti-social behavior compared to subjects in Athens. Unlike many studies on Europe, our focus on India, a developing country, is unique. We also find that cultural norms survive for many decades following the end of formal British colonial rule, which connects to the more general literature on cultural persistence. The overarching insight in this literature is that culture is "sticky," and can survive well beyond the phenomena responsible for its various attributes in the first place (Greif 1994, 2006; Voigtlaender and Voth 2012; Alesina, Giuliano, and Nunn 2013; Giuliano and Nunn 2017; Gorodnichenko and Roland 2017; Greif and Tabellini 2017; Nunn and de la Sierra 2017).

Second, our paper contributes to the large literature on the legacy of European colonialism on the fortunes of former colonies. Such work offers two non-mutually exclusive explanations linking history to the present: institutions and culture. One school of thought argues that colonizers often set up extractive institutions that persist and lead to poor outcomes after colonization (Acemoglu, Johnson, and Robinson 2001; Banerjee and Iyer 2005; Nunn 2008; Dell 2010; Lowes and Montero 2018).[7] Indeed, legal systems imposed by colonizers are correlated with many current economic outcomes (la Porta et al. 1998; Glaeser and Shleifer 2002).

In the context of India, Iyer (2010) finds former Princely States have worse long-run economic outcomes compared to British India. Unlike our focus on informal cooperation in one region of India, Iyer studies district-level differences between the entirety of the former Princely States and British India. She exploits

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[5]In two papers using a similar lab-in-the-field on a natural experiment methodology, Karaja and Rubin (2019) find persistent effects of the Habsburg-Ottoman border on contemporary trust, while Walker (2018) finds persistent effects of that border on savings behavior (likely due to historical access to financial institutions).

[6]Grosjean (2011) employs yet another approach—the "cultural gravity model"—which exploits variation in the duration a locality was under empire. Specifically, Grosjean exploits variation in the borders of the Ottoman, Habsburg, Russian, and Prussian Empires to test the legacy of the historical past on social trust in the present.

[7]However, "extractive institutions" were not present everywhere, even in erstwhile extractive colonies. See Dell and Olken (2019) for an example of colonial provision of public goods and Valencia Caicedo (2019) for an example of missionaries mitigating the negative effects of extractive institutions.

variation across native states in mostly central India, where rulers died without a natural heir and hence were annexed to the British Empire. Her identification, thus, does not exploit any variation within Rajasthan. Moreover, it is unclear whether stronger norms of local cooperation are substitutes or complements to factors correlated with long-run economic outcomes. Indeed, Iyer finds her results are not driven by differences in tax revenues between former Princely States and British India. Rather, native rulers faced stronger incentives to invest in public goods in Princely India. Focusing on a related but different question of informal norms, we find cooperative norms are stronger in (British) Kekri compared to (Princely) Sarwar in Rajasthan where British annexation was *not* because of the lack of a natural heir as in the Iyer study. Just as Iyer's study does not exploit variation within Rajasthan, it may well be that our results do not generalize to Princely States outside Rajasthan. Yet, we find suggestive evidence that individuals in the former Princely States (as a whole) report lower levels of overall trust today compared to individuals in former British Indian districts.

In the literature on colonization, another school of thought suggests that the more egregious aspects of colonization, namely slavery and thoughtless border assignment, affected cultural traits such as trust that are still observable in the present (Nunn and Wantchekon 2011; Michalopoulos and Papaioannou 2016). We study three Indian towns that were similar *before* (British) Kekri came under colonial rule in an accident of history. As in those studies, this "accident" allows us to study the impact of border assignment rather than that of pre-colonial differences—to our knowledge, there were no salient, pre-colonial differences between our experimental towns. While some effects of British institutions have faded in India (Banerjee and Somanathan 2007, Chaudhary and Garg 2015), we find enduring effects of colonial rule on cultural norms of cooperation.

Third, our paper contributes to a growing literature exploiting lab-in-the-field techniques. Unlike traditional experiments that use convenient samples of college students, the lab-in-the-field approach takes validated experiments from the lab to field populations that cannot be studied in the lab. Our paper is closest in spirit to Robinson (2016), Gangadharan et al. (2017), Lowes et al. (2017), Lowes and Montero (2018), Walker (2018), and Karaja and Rubin (2019), who also use lab-in-the-field experiments across plausibly exogenous borders to test whether culture "sticks" despite changing economic and political circumstances.

While our design has some nice features—namely a plausibly exogenous treatment combined with an incentivized test of behavior—we recognize that it comes with drawbacks. For one, its external validity is not obvious. We report the results of experiments in three Indian towns, which may be idiosyncratic. In addition, for reasons mentioned above, external validity is not even obvious *within India*. Rulers in Rajasthan could have conceivably acted different from other Princely rulers in the subcontinent, thus differentially affecting norms related to public good provision. Yet, our results *in conjunction* with other studies using a similar methodology (Robinson 2016; Lowes et al. 2017; Lowes and Montero 2018; Walker 2018; Karaja and Rubin

2019), which report similar findings, along with a larger literature on the "stickiness" of culture, suggests that our results are consistent with the literature.

One caveat is that our experiment may be considered (very) low-N: while over 500 people participated in our games, we are primarily interested in inter-town differences. We get some traction around the low-N issue by exploiting variation in participants' family ties to their town. This would be a bigger issue if we were the first to test for inter-regional cultural differences, or differences between colonized and non-colonized regions. Our results that former colonial borders matter for cultural outcomes today are consistent with a large literature on the enduring effects of colonialism. If our results are indeed idiosyncratic, they are so in a manner that is consistent with much larger N studies, which we believe to be unlikely. Moreover, there is the issue of replication: these results would almost surely be impossible to replicate in the three towns that we study, since much of their relatively small populations have already been exposed to the experiment. That said, replication across similar historical borders elsewhere in the country would be possible and indeed informative.

The rest of the paper is organized as follows. Section 2 overviews the historical setting of the natural experiment we exploit in this paper. Section 3 describes the experimental design and implementation. Section 4 offers an informal theoretical framework. Section 5 presents the experimental results. Section 6 discusses potential mechanisms connecting the history of colonialism to present-day cooperation norms, and Section 7 concludes.

2   Historical Background on Locations

Our lab-in-the-field experiment exploits a historical boundary between British India and Princely India. During the colonial period, the British directly controlled roughly two-thirds of the Indian subcontinent. The remaining territories, known as Princely States or Native States, came under the rule of various hereditary kings. Such states negotiated treaties with the British whereby they continued to exist as independent states while recognizing the "supreme authority of the British Government" (House of Commons 1913, p. 14). As a rule, Princely States were not allowed to engage in political or military relations with other Princely States. In exchange for giving the British control over their defense and foreign policy, the colonial government allowed them to manage their local administration. As seen in Figure 1, the Princely States were scattered throughout the country with large concentrations in western and central India.[8]

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[8] As the Mughal Empire declined in the early 18th century, many regional states emerged to replace Mughal rule. The strongest of these states (the Maratha Dominion in western India, Hyderabad in the Deccan plateau, and Mysore in southern India) wrestled for control with the East India Company. After multiple battles and alliances with regional powers, the Company emerged triumphant by the early 19th century, with the largest territories under their command. British India included the coastal provinces of Bengal, Bombay, and Madras and the alluvial plains along the Ganga river valley. Most of north India

Our experiment targets three towns located along a historical border separating Ajmer province of British India and two Princely States immediately surrounding Ajmer (Kishangarh and Shahpura). These towns are located in the current state of Rajasthan (called Rajputana in the colonial period). Kekri, the town in former British India, was historically part of the Kekri sub-division in southeastern Ajmer province. Sarwar, a town in the former Princely State of Kishangarh, lies 17 kilometers northwest of Kekri. Shahpura, the capital of the former Princely State of Shahpura, lies 46 kilometers southwest of Kekri. The inset of the map in Figure 1 shows the princely towns located in the larger (yellow) state and the British India town (Kekri) located in the smaller (white) region.

We selected these towns because they are located in close proximity to each other, were barely on opposite sides of the old colonial border, were of comparable size, and shared a common history before Kekri came under direct British rule for idiosyncratic military reasons, unrelated to its agricultural or commercial potential. All three towns were part of pre-colonial Rajput states that were under Mughal rule in the 16th and 17th centuries.[9] As the Mughal Empire declined in the 18th century, these towns along with the rest of Rajputana came under the control of the Marathas.[10]

Following years of payments to the Maratha Empire and frequent attacks by Maratha-associated raiders (known as Pindaris), the Rajput states solicited military help from the East India Company in the early 19th century. The Company defeated the Marathas and the Pindaris. As a result the Maratha leader Daulat Rao Sindhia ceded the central part of the region (namely, Ajmer) to the British in 1818 following the Anglo-Maratha war. Rajputana was not agriculturally productive. Hence, the East India Company did not bring this entire area under direct British rule. Rather, they were content with direct rule over the small enclave of Ajmer province. While the central location of Ajmer city was perhaps attractive, Kekri was an inconsequential tiny town on the southeastern edge of Ajmer province. It came under British rule more from an arbitrary accident of history. Kekri remained under direct British rule for 129 years up to Indian independence in 1947. The East India Company signed treaties with the Rajput states surrounding Ajmer province guaranteeing their local independence and status as Princely States. Our two Princely towns of Sarwar and Shahpura thus remained in Princely States up to Indian independence.

Although we exploit a very local historical border separating (British) Kekri and (Princely) Sarwar-Shahpura, these towns were located in larger areas that shared a common history. Our towns were part

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also came under direct British control by mid-19th century. The Company initially set up trading posts in Indian ports under the patronage of Mughal emperors. Hence, the first territories to come under British rule were along the coast. As the British gradually annexed new territory over the ensuing century, they favored agriculturally or commercially advanced regions. Arid deserts in the west and parts of central India with low agriculture potential were intentionally left under the control of local rulers.

[9]Rajputs refer to patrilineal clans that ruled over this part of India.

[10]The Maratha Empire was a Hindu Empire that rose from western India to control vast territory in the 18th century. In the late 17th century, the Marathas were constantly fighting the Mughal Empire, but towards the end of their rule in the early 19th century, they were in constant conflict with the East India Company.

of small states carved out of the larger Rajput states of Ajmer and Jaipur in the Mughal period. Jaipur was a state adjoining Ajmer, which had similar culture and geography. In both cases the original founders received these lands as a reward from Mughal emperors for their military service.[11] Kishangarh, the Princely State where Sarwar was located, was founded by the Rathor clan of Rajputs that ruled the larger state of Jodhpur to the west of Ajmer. On account of a family feud, the original founder (Kishan Singh) moved from Jodhpur to Ajmer. In 1611, the Mughal Emperor Akbar gave him some villages to rule that were part of the neighboring Jaipur state. Kishan Singh named this area Kishangarh and established a town of the same name as his capital city. In the early 18th century, the area of Sarwar was added to Kishangarh as a reward to the ruler for providing military service to Mughal Emperor Bahadur Shah I. Similarly, the Mughal Emperor Shah Jahan rewarded the founder of Shahpura with land that was part of the crown lands of Ajmer.

In short, the historical boundary separating (British) Kekri from (Princely) Sarwar and Shahpura was arbitrary resulting from military conquest unrelated to any features of these small tiny towns along the border. Although the city of Ajmer, the capital city of Ajmer province, was an important historical city because of its central location, this was certainly not true for Kekri, a small town on the outskirts of Ajmer province. Our experiments thus exploit this extremely local boundary which left (British) Kekri under British rule for idiosyncratic reasons unrelated to underlying differences in geography, culture, or history across these towns.

Table 1 summarizes the population of these towns from the 1931 and subsequent censuses. In 1931 all three towns were classified as Class V municipalities with populations of 4,000 to 10,000. As of 2011, they are still small municipalities with populations ranging from 20,000 to 42,000. They were and continue to remain Hindu majority towns with similar proportions of historically marginalized groups such as the Scheduled Castes and Scheduled Tribes.[12] Their Muslim population jumped around, with more changes in Kekri. The 1961 decline in the Muslim share in Kekri is likely due to the Partition of India, although the fraction Muslim nearly doubled between 1961 and 2011. Rajasthan borders Pakistan, and there was some out-migration of Muslims from Rajasthan to Pakistan (Census of India, 1951).[13]

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[11]We are not the first to recognize the natural experiment potential of this region. Similar to our approach, Verghese (2016) selected Jaipur and Ajmer districts for a matched qualitative comparison to assess the effect of direct colonial rule on post-colonial conflicts in these areas. He argues (British) Ajmer is a good comparison to (Princely) Jaipur because of their shared history, language, and culture.

[12]Data on SC/ST are not reported at the town level in 1931.

[13]Verghese (2016) suggests that religious policies of the colonial government were different than those of Princely States and could perhaps explain the differential changes in the minority religion population in response to Partition. Historical accounts do not mention religious conflict in these three towns, which suggests that colonial era differences in attitudes towards religion were similar. Indeed, these towns have not experienced any Hindu-Muslim riots in the post-independence period. We show in the Appendix that constraining our sample to non-Muslim and non-SC/ST samples yields similar results to the main experimental results.

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Table 1: Characteristics of Towns

| Town | State | 1931 Census of India | | | | |
		Pop	% Male	% Hindu	% Muslim	% Christian
Kekri	British India	7,179	50.76	73.88	26.03	0.13
Sarwar	Kishangarh	4,000	52.15	71.50	21.25	0.00
Shahpura	Shahpura	9,298	50.43	77.37	17.25	0.01

| Town | District | 1961 Census of India | | | | | |
		Pop	% Male	% SC	% ST	% Muslim	% Christian
Kekri	Ajmer	12,394	52.30	19.16	0.00	7.20	1.43
Sarwar	Ajmer	6,182	52.26	14.70	2.65	24.49	0.15
Shahpura	Bhilwara	12,165	52.17	16.70	2.38	13.56	0.28

| Town | District | 2011 Census of India | | | | | |
		Pop	% Male	% SC	% ST	% Muslim	% Christian
Kekri	Ajmer	41,890	50.93	18.10	0.90	14.14	0.90
Sarwar	Ajmer	20,372	51.38	14.88	3.95	33.61	0.05
Shahpura	Bhilwara	30,320	50.39	19.29	2.66	18.36	0.03

Sources: Census of India, 1931, 1961 and 2011. SC is Scheduled Castes and ST is Scheduled Tribes.

In terms of administration, Ajmer became a Class "C" state that came under the Central Government after independence. However, it was converted into a district of Rajasthan state as part of the 1956 Indian States Reorganization Act. At the time, Sarwar was merged to Ajmer district. Indeed, (British) Kekri and (Princely) Sarwar have been under the same district administration for over 60 years. The town of Shahpura has been part of the neighboring district of Bhilwara since independence. Ideally, we would want the towns balanced on every single dimension. In our case, however, this was not feasible. So our selection emphasizes their shared history, size, close proximity to each other, current administration, and some demographic features.

3 Experiment Design and Implementation

3.1 Experiment Design

In our lab-in-the-field experiment, we use the standard version of the linear public goods game (i.e., voluntary contribution mechanism) that has been played in labs across the United States and Europe (Isaac and Walker 1988a, 1988b; Andreoni 1988; Ledyard 1995; Anderson and Putterman 2006; Chan et al. 2008; Brandts and Schram 2008; Chaudhuri 2011). Participants from the three towns played the same public goods game three

times. In each game, they were first told they were a part of a group of four members, drawn either from their own town or some combination of their town and one of the other two towns. While they knew the towns of the other group members, they were not told the names of any member of their group. The groups were randomly assigned via spreadsheet and even the experimenters did not know the identities of the group members.

In the game, each participant was given an endowment of 150 rupees ($2.25) to be split between an individual pot and a joint pot. Participants made only one decision on how much to contribute to the joint pot: 0, 50, 100, or 150 rupees. Participants made their contribution by circling any of the four numbers 0, 50, 100, or 150, representing their contribution as shown in Figure 2. All contributions to the joint pot were then doubled and split evenly among the four group members. Hence, each participant's total earnings was the sum of their individual contribution (i.e., the amount they did *not* contribute to the joint pot) plus a quarter of the doubled group contribution. Since there is low and varying levels of education in India, we used discrete rupee amounts as opposed to the more standard terminology of tokens, so subjects would not have to make an extra calculation from tokens to monetary earnings. After explaining the game using text and pictures, the experimenters reviewed a simple quiz to ensure subjects understood the game.[14]

Figure 2: Experimental Handout

0   50   100   150

Please circle a number above 0, 50, 100, or 150. This is the number of rupees you will place in the **joint pot**. You will keep the remaining rupees.
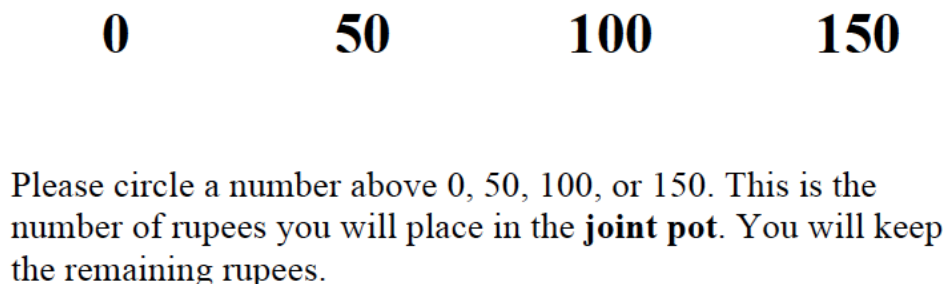
Subjects played the game three times. In experiment (A), participants were told they would be placed in groups of four with three other participants from their town. In experiments (B) and (C), participants were told they would be placed in a group with one member from their town and two from one of the other towns. Table 2 describes the experiment treatment for each town. Other than the change in group composition, the experiments were identical. Our set-up can thus be viewed as a single-shot version of the standard linear game repeated three times with different group members.

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[14]Experimenters reviewed each quiz question until the subjects could perform the simple calculations adding together their individual and group contribution under different scenarios. For a complete set of experiment instructions (in English), see Appendix B. In the Appendix we also include the quiz (Appendix B.2), post-experiment survey (Appendix B.3), and the pictorial representation that experimenters reviewed with participants (Appendix B.4).

Many studies have found that repeated public goods games lead to decay in subsequent rounds with lower contributions to the joint account (Ledyard 1995; Chaudhuri 2011). To address this concern, half the participants in each town were randomly assigned to play the experiments in order ABC, and the other half were assigned to play in order BAC (see Table 2). After playing the games the subjects completed a short demographic survey.

Table 2: Treatments

Town	Historical Polity	Order	N
Kekri	British India	Kekri-Sarwar-Shahpura	80
		Sarwar-Kekri-Shahpura	74
Sarwar	Princely State	Sarwar-Kekri-Shahpura	100
		Kekri-Sarwar-Shahpura	100
Shahpura	Princely State	Shahpura-Kekri-Sarwar	100
		Kekri-Shahpura-Sarwar	100

Notes: Home town groups consist of four players from the same town. Mixed town groups consist of two players—oneself and a participant from one's town—and two participants from the other town. Hence, for the Kekri order Kekri-Sarwar-Shahpura, the first experiment group contains only participants from Kekri, the second (third) experiment group contains the subject and one other participant from Kekri, with the other two group members from Sarwar (Shahpura).

3.2 Implementation in Rajasthan

We hired Indicus Analytics (part of Nielsen India), an economics research firm based in New Delhi, to conduct the experiments across the three towns in Rajasthan in October 2016. Before the actual experiments, a pilot experiment was carried out in the town of Tijara, which is located in another district of Rajasthan. The pilot was completed in September 2016. We selected Tijara because it was similar in size (population 20,000) to the experiment towns.

In preparation for the experiments, local IRB approvals were secured and local officials in each town, including the police commissioner, were informed of the exercise. We never discussed with the Nielsen team why these towns were selected. As far as we know they were unaware of the historical boundaries between the towns. This is especially true for Kekri and Sarwar, which are located in the same district today. Hence, the experimenters were blind regarding the research question, the composition of the groups, and the choices made by one's group members.

Similar local facilities in each town were secured to conduct the experiments. 200 participants, all of whom were 18 years or older, were recruited per town. Local recruiters used the same script, informing

individuals that they were running an experiment on how people make decisions on behalf of researchers in India, the UK, and USA. If they agreed to participate, they would receive 100 rupees ($1.50) with a potential to earn more money. The unskilled daily wage in Rajasthan is around 200 rupees while the skilled daily wage is around 230. If individuals expressed an interest in participating, they were given information on the day and time of the experiments. Subjects were recruited a day or two in advance of the actual experiments.

On account of the Indian setting of small towns with low levels of schooling, the experiments were conducted individually over two days per town (i.e., experimenters conducted the experiment with only one participant at a time). Each experimenter used the same instructions to explain the experiment, showed the pictures explaining the experiment, and reviewed the quiz questions. After the subjects circled their choices, the experimenter entered their responses to the short survey. In each town the process took around an hour per person, and around 100 individuals played the experiments per day. Participants were paid their participation fee in cash on the day of the experiment. The team returned one week later to pay the experimental earnings.

In Sarwar the experiments were conducted on October 4–5, 2016. In Shahpura they were conducted on October 8–9, 2016. In Kekri 154 experiments were conducted on October 6–7, 2016. We were unable to complete the remaining 46 subject experiments on the 7th because unrecruited persons from the town showed up at the experiment facility wanting to participate. Since they had not been recruited and were calling on more people to participate, the experiments were paused for the day. The team returned on October 20, 2016 to complete the individual experiments for the remaining 46 people. We suspect there was local chatter in Kekri about these experiments between October 7 and October 20 that influenced the decisions of the October 20th participants. The local chatter would likely have been about strategies to maximize individual pay-offs. If this were the case, we would expect to see the October 20th Kekri participants contribute less in all three games. Appendix Table A.1 shows the differences in contribution for each experiment between the October 6–7 and October 20th participants. The means in Appendix Table A.1 show that the October 20th participants contributed less in both home town and mixed town groups compared to the October 6–7 participants. On account of this contamination and potential "gaming" of the experiments, we drop these 46 participants from the analysis.

4   Theoretical Framework

Participants in each town played three standard public goods games (i.e., the voluntary contribution mechanism). In these games, they were given an endowment of W, chose to contribute y_i to the joint account (i.e., public good), and kept what they did not contribute in their private account, i.e., $W - y_i$. Their

contributions to the joint account were multiplied by $x > 1$, and the joint account was distributed evenly among the N members of the group. Thus, each individual's payoff was $P_i = (W - y_i) + \frac{x}{N} * \left(y_i + \sum_{j \neq i} y_j\right)$. In our experiment, $W = 150$, $x = 2$, and $N = 4$. The choice y_i was limited to the set $\{0, 50, 100, 150\}$. As long as $0 < \frac{x}{N} < 1$, the money-maximizing dominant strategy of this single-shot game is $y_i = 0$, or the free-riding outcome. On the other hand, the cooperative and Pareto-optimal outcome is $y_i = W$, the maximum. Similar to the provision of public goods in the real world, this game mimics the tension between self-interest and cooperation.

Beginning with early work in sociology and political science (Marwell and Ames 1979, 1980; Orbel 1981), a large literature has shown that people give more than the free-riding Nash equilibrium (Ledyard 1995). In the lab, contributions range from 40% to 60% of the endowment, halfway between the free-riding and Pareto-optimal contribution. Lab experiments suggest that people give more than the Nash outcome because of social norms, altruism, the "warm glow" of giving, and beliefs about other group members' contributions, i.e., reciprocity (Andreoni 1990; Ledyard 1995; Chaudhuri 2011). While we have learned much about why people contribute in the lab, we know less about whether historical exposure to major institutions affects the degree of cooperation observed in such games. Our lab-in-the-field experiment is designed to test whether populations exposed to direct colonial rule in the past behave differently today from populations exposed to indirect rule.

Our experiments are three single-shot games where every feature of the game is identical other than group composition. Subjects play with one home town group and two mixed town groups. Our field experiment is thus similar to Partner and Stranger lab games. In such games, subjects are either paired in groups with the same subjects and play repeated games (partners), or subjects are rematched in groups after each single-shot game (strangers). As noted by Andreoni and Croson (2008), the findings from such experiments are mixed. One-third of the studies find partners give more than strangers, one-third find strangers give more, and one-third find no difference in contributions. In spite of these differences, these games have taught us that (1) confusion alone does not explain positive contributions (Andreoni 1995), (2) subjects' beliefs about how much other members of the group will contribute affects contributions (Croson 1998), and (3) the "warm-glow" of giving is more important than altruism (Palfrey and Prisbey 1997). Hence, in our experiment it is possible that subjects' beliefs about the contributions of people from the other town in British India or Princely India, their desire to match those contributions, and their degree of "warm-glow" towards other townspeople affect contributions in home town and mixed town groups.

The primary questions our experiment is structured to address are: (1) whether historical exposure to princely rule (Princely India) engenders different norms of cooperation today compared to areas under direct colonial rule (British India); and (2) whether historical exposure to princely rule (Princely India) engenders

14

different norms of cooperation today with people from British India. We conjecture that the colonial border was indeed salient and may have contributed to differences in cooperative norms that persist to today. This may be true to the extent that "culture" is conceptualized as a simplifying heuristic through which individuals comprehend the complex world around them (Boyd and Richerson 1985; Henrich et al. 2001; Guiso et al. 2006), and that "culture" is passed down, to some extent, vertically from parent to child (Boyd and Richerson 1985; Bisin and Verdier 2001; Nunn and Wantchekon 2011; Dohmen et al. 2012; Giuliano and Nunn 2017; Iyigun et al. 2020).[15]

To this end, our experimental design splits subjects into a "treatment" group and a "control" group. Our treatment comparison is Kekri and Sarwar. These two towns were (barely) on opposite sides of the old border, with Kekri in British India and Sarwar in a Princely State. Within this comparison, we might think of Kekri as being "treated" with British rule and institutions. Moreover, these two towns are now part of the same administrative district, meaning that any cooperative norms observed today cannot be attributed to differences in modern governance. The control comparison is Sarwar and Shahpura. They were both located in Princely States. They serve as a useful control because it is possible that people in Sarwar and Kekri act differently for reasons unrelated to their history of colonial rule. If this is true, we would also expect differences to arise in the comparison between Sarwar and Shahpura. Yet, if the old colonial border is the salient difference, participants in Sarwar and Shahpura should act similarly in the different public goods games.

Our experiment first tests whether princely rule (Princely India) engenders different cooperative norms today compared to areas under direct colonial rule (British India). It is unclear ex-ante whether we would expect subjects from British India to give more or less to own-town groups compared to those in Princely India. While (British) Kekri had an earlier legacy of municipal taxation, suggesting higher contributions, town identity was likely stronger in (Princely) Sarwar where local Indian rulers provided public goods albeit in a more centralized fashion. Being part of a small local state may have also made cooperation with co-townspeople historically more valuable in (Princely) Sarwar. To test this possibility, we compare contributions in experiment (A), i.e., contributions to co-townspeople, between (British) Kekri and (Princely) Sarwar.

Second, our experiment tests whether princely rule (Princely India) engenders different contributions today when groups are "mixed" (i.e., there are two participants from one's home town and two from another town). There is a large experimental literature on "in-group" versus "out-group" giving.[16] While such

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[15]The other mechanisms of cultural transmission are horizontal (via peer group) and oblique (via education). See Boyd and Richerson (1985), Henrich (2001), Bisin and Verdier (2008), Tabellini (2008), Guiso et al. (2008), and Mokyr (2016). Since we cannot test these transmission mechanisms, we constrain our predictions to the vertical transmission mechanism.

[16]For reviews of this literature, see Brewer (1999) and Balliet et al. (2014).

group dynamics have been shown to be created in the lab (Tajfel et al. 1971; Chen and Li 2009), field experiments find significant in-group bias when group identity is based on nationality (Robinson 2016), East/West culture (Yuki et al. 2005), ethnicity (Robinson 2016), historical polity (Karaja and Rubin 2019), and kibbutz membership (Ruffle and Sosis 2006). In short, a host of deeply-seated cultural identity markers create in-group and out-group dynamics that affect economic decisions (as posited theoretically in Akerlof and Kranton 2000). Our paper builds on this literature by testing whether exposure to colonial rule generates different levels of out-group bias between groups that were and were not exposed.

For the treatment group (Kekri and Sarwar), the appropriate comparison is the participants' decisions in experiment (B), in which participants were all placed in groups comprised of two members from (British) Kekri and two members from (Princely) Sarwar. For the Sarwar-Shahpura control group, the appropriate comparison is the participants' decisions in experiment (C), in which they were placed in groups comprised of two members from (Princely) Sarwar and two members from (Princely) Shahpura. This serves as a useful control because if the out-group bias is driven by idiosyncrasies in the Kekri and Sarwar populations, unrelated to historical differences, then we would expect to observe differences in out-group contributions in the Sarwar-Shahpura comparison as well.[17]

5   Results

5.1   Demographic Characteristics of Participants

Before presenting the results of the experiment, we present balance tests across all three towns on basic demographic characteristics, derived from the survey administered after the experiment. Nielsen recruited participants so that there was as much balancing as possible across readily identifiable markers such as gender and age. As our summary statistics suggest, while Nielsen was broadly successful, this effort did come with some drawbacks, which we try to control for in the data analysis.

The demographic summary statistics are reported in Table 3. Around 40% of the participants were female in all three towns, with no statistically significant difference between any of the towns. In the "treatment" comparison, Kekri vs. Sarwar, there is no statistically significant difference in the fraction of young participants (around 1/3 are under 25 in both groups). However, in the "control" comparison the Shahpura sample appears to be younger (0.53 vs 0.30 under 25 years old, p = 0.000). Kekri participants are on average a little more educated than those from Sarwar (0.56 vs. 0.68 had less than high school education,

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[17]We cannot directly compare contributions in the mixed Kekri-Shahpura groups because their order was not randomized. These mixed group experiments were always Experiment (C) for Kekri subjects, unlike Shahpura where they were Experiment (B). We thus cannot draw a meaningful inference from their comparison because of decay effects in repeated public goods games. Given our budget we randomized order in the Kekri-Sarwar comparison.

p = 0.026), less likely to be Muslim (0.03 vs. 0.34 and 0.45 for Sarwar and Shahpura) and more likely to be from a lower caste (0.55 vs. 0.20 and 0.23 for Sarwar and Shahpura).[18]

Table 3: Summary Statistics, Demographics

Town	Female	Age Under 25	Married	Less Than High School	Muslim	SC/ST
Kekri (British)	0.46	0.34	0.68	0.56	0.03	0.55
N = 154	(0.04)	(0.04)	(0.04)	(0.04)	(0.01)	(0.04)
Sarwar (Princely)	0.41	0.30	0.70	0.68	0.34	0.20
N = 200	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Shahpura (Princely)	0.39	0.53	0.69	0.57	0.45	0.23
N = 200	(0.03)	(0.04)	(0.03)	(0.04)	(0.04)	(0.03)
		p-values: Mann-Whitney-Wilcoxon test				
Kekri vs. Sarwar	0.387	0.378	0.639	0.026	0.000	0.000
Kekri vs. Shahpura	0.180	0.001	0.791	0.850	0.000	0.000
Sarwar vs. Shahpura	0.611	0.000	0.828	0.030	0.032	0.470

Notes: Standard errors of mean in parentheses. SC/ST refers to Scheduled Caste or Scheduled Tribe.

While in an ideal experiment we would have had equal weights across religion and caste, in reality this was difficult to implement.[19] Since participants were only told the town in which their group members came from, we have every reason to expect that participants would expect to be grouped with an "average" member of the other town, where the weights are based on the actual population, not the sample in our experiment. Moreover, in the data analysis we show individual fixed effects regressions comparing contributions across experiments for the same individual. Balance is less of a concern in the individual comparisons. We also show results where we restrict the analysis to non-Muslims and non-SC/ST (see Appendix Tables A.3–A.6 for results). Our individual fixed effects and split sample results are similar to the main results.

One problem with having an unbalanced sample on the religion and caste dimensions is that these features may correlate with income, which itself likely affects one's willingness to contribute to a joint pot. To address this issue, we turn to the economic characteristics of the participants, as seen in their occupational status. In the post-experiment survey, participants were given seven occupational options to choose from: own account worker (self-employed), unpaid family worker, regular salaried or wage worker, casual wage laborers, student, employer, and seeking and/or available for work.[20] The occupational summary statistics

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[18]We also asked numerous questions about participants' financial history (i.e., borrowing and lending). The averages are reported in Appendix Table A.2. There are few statistically significant differences across towns in any of the participants' personal finance characteristics.

[19]For more on the role that Hindu and Muslim differences have played in past economic outcomes, see Jha (2013) and Chaudhary and Rubin (2011, 2016). For more on the economics of religion in India in general, see Iyer (2018).

[20]We did not include the option for "student" in the survey, but our enumerators noted it as one's occupation if the participant claimed to be a student.

are presented in Table 4. Reassuringly, the occupational distributions are broadly the same across the three towns. Around 1/3 of participants are self-employed, and another 1/4 are unpaid family workers. Around 10–15% of participants are regular wage workers, casual wage laborers, and students. A very small proportion are employers or seeking work.

Table 4: Summary Statistics: Occupations

Town	Self-Employed	Family Worker	Regular Wage	Casual Laborer	Student	Employer	Seeking Work
Kekri (British)	0.31	0.29	0.16	0.09	0.11	0.01	0.04
N = 154	(0.04)	(0.04)	(0.03)	(0.02)	(0.03)	(0.01)	(0.02)
Sarwar (Princely)	0.38	0.29	0.14	0.07	0.07	0.01	0.03
N = 200	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)
Shahpura (Princely)	0.28	0.23	0.15	0.13	0.16	0.03	0.03
N = 200	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.01)	(0.01)
	p-values: Mann-Whitney-Wilcoxon test						
Kekri vs. Sarwar	0.143	0.964	0.580	0.589	0.129	0.454	0.454
Kekri vs. Shahpura	0.605	0.224	0.880	0.311	0.181	0.182	0.454
Sarwar vs. Shahpura	0.034	0.212	0.668	0.096	0.003	0.476	1.000

Notes: Standard errors of mean in parentheses.

Next, we turn to participants' history in the town, knowledge of people from the other towns, as well as the degree to which they trust people. The results are summarized in Table 5. Unlike in the previous table, we divide responses into "Treatment" and "Control" groups. This is necessary because of how we define the "outsider" group. In the Treatment, the outsider group for Kekri participants is Sarwar and vice versa. In the Control, the outsider group for Shahpura participants is Sarwar and vice versa.

First, we asked participants in the post-experiment survey how long they and their families have lived in the town. Around $\frac{3}{4}$ of participants have lived in the town their entire life and have parents from the town. These numbers are not statistically different across towns. Second, we asked them if they knew someone from the other two towns in question. Here, outsiders are defined by the group that participants played with in experiment (B) in the Treatment group and (C) in the Control group. There is no statistically significant difference in the fraction of participants who know outsiders in the treatment comparison (Kekri vs. Sarwar, 0.54 vs. 0.61, p = 0.151) or in the control comparison (Sarwar vs. Shahpura, 0.31 vs. 0.35, p = 0.400). It is unsurprising that inter-town familiarity is lower in the control comparison, since Shahpura is further away from Sarwar than is Kekri. Finally, we asked participants to rate how much they trusted co-townspeople and outsiders on a 1–5 scale (with 1 being extremely untrustworthy and 5 being extremely trustworthy; see Appendix B.3 for details). Such responses are likely endogenous to the event under study and perhaps

Table 5: Summary Statistics: Life History, Local Knowledge, and Trust

Town	Parents from Town	Lived in Town Entire Life	Know Outsider	Trust Co-townspeople	Trust Outsiders
			Treatment Group		
Kekri (British)	0.80	0.76	0.54	4.14	3.42
N = 154	(0.03)	(0.03)	(0.04)	(0.09)	(0.08)
Sarwar (Princely)	0.74	0.77	0.61	4.05	3.52
N = 200	(0.03)	(0.03)	(0.03)	(0.07)	(0.07)
		p-values: Mann-Whitney-Wilcoxon test			
	0.189	0.908	0.151	0.153	0.377
			Control Group		
Sarwar (Princely)	0.74	0.77	0.31	4.05	3.21
N = 200	(0.03)	(0.03)	(0.03)	(0.07)	(0.07)
Shahpura (Princely)	0.80	0.83	0.35	3.90	3.11
N = 200	(0.03)	(0.03)	(0.03)	(0.09)	(0.06)
		p-values: Mann-Whitney-Wilcoxon test			
	0.181	0.106	0.400	0.574	0.366

Notes: Standard errors of mean in parentheses. The "Trust Co-townspeople" and "Trust Outsiders" variables are on a 1-5 scale. For the "Parents from Town" column, N=141 in Kekri, N=188 in Sarwar, and N=197 in Shahpura. Sarwar statistics are the same in the Treatment and Control groups with the exception of how the "Outsider" town is defined. It is defined as Kekri in the Treatment group and Shahpura in the Control group. For both Kekri and Shahpura, the "Outsider" town is defined as Sarwar.

even the experiments themselves. But, they are useful to report in any case. Not surprisingly, on average people trust co-townspeople more than they do outsiders. In both the treatment and control comparisons, the inter-town differences are not statistically different.[21]

5.2 Group Contributions in Treatment and Control Groups

We now turn to the experiment results. We first show histograms of the joint contribution in the different experiments. Figure 3 shows the distribution of joint contributions to the insider and outsider groups within our treatment group (i.e., Kekri and Sarwar). The outsider group in both towns is composed of four members: the subject, a member from their own town and two members from the other town. Thus, both Kekri and Sarwar's outsider group includes two people from Kekri and two from Sarwar, corresponding to experiment (B).

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[21]It could also be the case that, because we waited a week to pay subjects (due to the nature of the experiment), less trusting individuals might trust the *experimenters* less and thus contribute less to the joint pot. While we have no way of determining the extent to which this affected decision-making, for it to affect our results it would have to affect participants with and without family ties to the town differently in the towns. We have little reason to believe this is the case, especially since our measures of trust reported in Table 5 reveal no statistically different levels of trust across villages.

Figure 3: Histograms of Contributions in Treatment Groups, Kekri and Sarwar
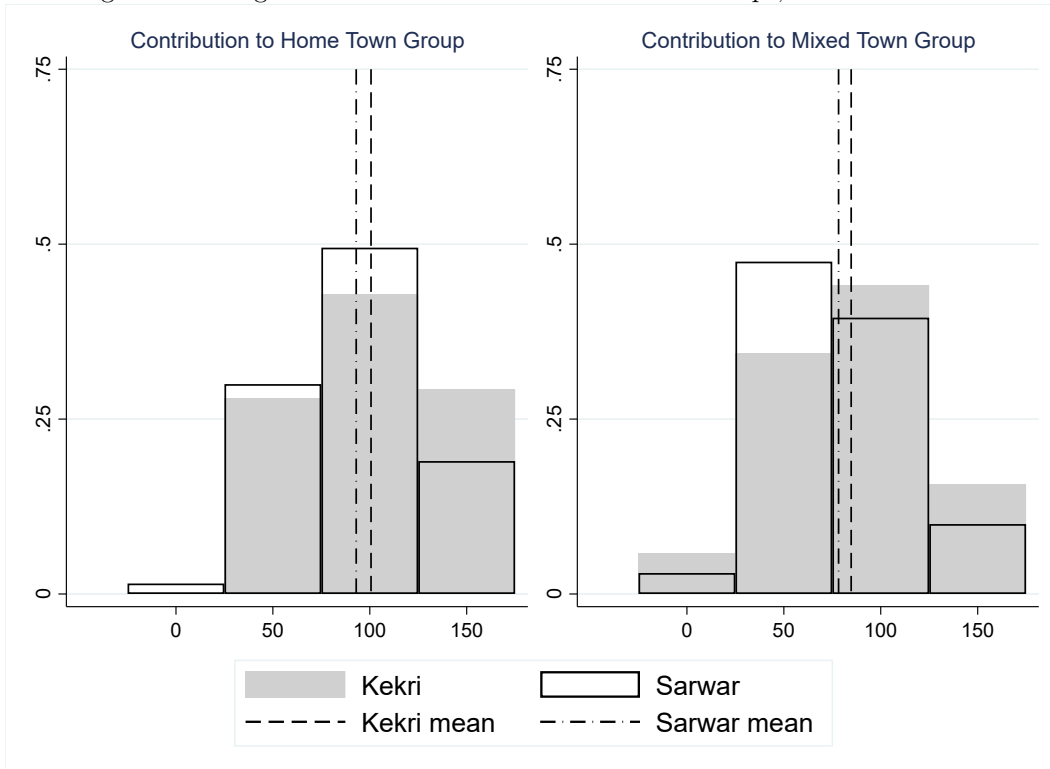
The histogram on the left in Figure 3 shows the participants' joint contribution in groups comprised solely of co-townspeople, i.e., experiment (A). Participants from (Princely) Sarwar are more likely to contribute 50 and 100 rupees to their home town groups. Indeed, the free-riding contribution of 0 rupees is rare at 1.5 percent of participants. In Sarwar, 30 percent of participants contribute 50 rupees, 50 percent give 100 rupees and 19 percent give 150 rupees. Although participants from (British) Kekri never contribute 0 rupees, their contributions are similar to those from Sarwar. In Kekri, 28 percent of participants contribute 50 rupees, 43 percent give 100 rupees and 29 percent give 150 rupees. More people in (British) Kekri give the Pareto-optimal contribution of 150 rupees.

The histogram on the right in Figure 3 shows participants' joint contribution in mixed town groups, i.e., experiment (B). One pattern immediately jumps out: participants in both towns contribute significantly less to their outsider group than insider group. In US laboratory settings, early experimental work found individuals were more cooperative in groups with strangers than partners (Andreoni 1988). Some studies have confirmed those early findings and others have found opposite results (Tajfel et al. 1971; Fershtman and Gneezy 2001; Yuki et al. 2005; Ruffle and Sosis 2006; Balliet et al. 2014; Robinson 2016; Karaja and Rubin 2019). But we are not matching people as partners in a lab setting. Rather, our insider group consists

of people from the same town where families have lived together for generations. It is unsurprising then that Indian subjects are more cooperative with their fellow townspeople.

Participants from (British) Kekri are more likely to contribute sums closer to the Pareto-efficient outcome of 150 rupees when matched in outsider groups than are participants from (Princely) Sarwar. Forty-four percent of Kekri subjects contributed 100 rupees to the outsiders group and another 16 percent gave the Pareto-efficient contribution. In comparison, 39.5 percent of Sarwar subjects contributed 100 rupees and just another 10 percent chose the Pareto-efficient contribution of 150 rupees when matched in outsider groups with people from Kekri.

These figures suggest subjects in (British) Kekri are more cooperative, especially in outsider groups, than subjects in (Princely) Sarwar. Although we offer subjects only a discrete option for their joint contribution— namely 0, 50, 100, or 150 rupees—our findings are in line with other studies of single-shot public goods games (Andreoni and Croson 2008). Contributions often range from 40 to 60 percent of the initial endowment. Our contributions fall on the higher end of this range at 50 to 60 percent of the 150 rupees endowment across the experiments.

Figure 4: Histograms of Contributions in Control Groups, Sarwar and Shahpura
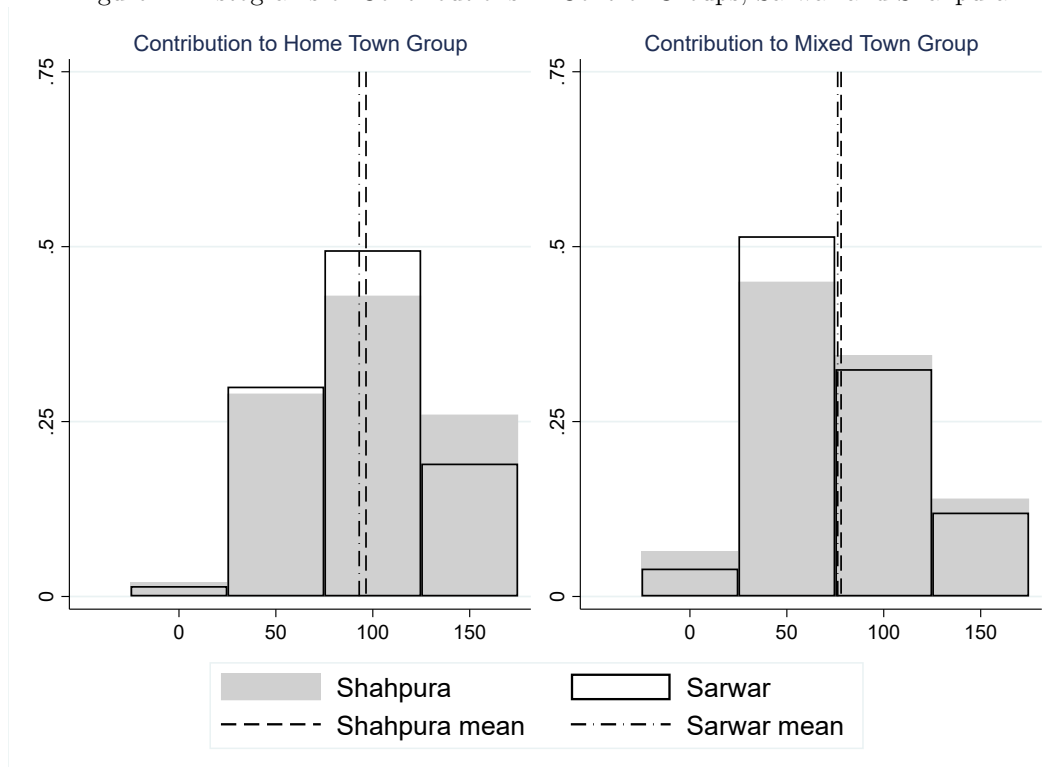
In Figure 4 we show these distributions for Sarwar and Shahpura, both towns located in former Princely India. In this case the outsider group for both includes two individuals from Sarwar and two from Shahpura,

corresponding to experiment (C). As seen in the graphs, the distribution of joint contributions to the insider and outsider groups are remarkably similar for Sarwar and Shahpura. We do not observe the difference seen in Figure 3 between Kekri and Sarwar. Indeed, if the differences in cooperative behavior are on account of the historical legacy of direct and indirect colonial rule, then we should not find differences in cooperation within outsider groups between Sarwar and Shahpura, both towns of former Princely India. The histograms in Figure 4 support this hypothesis.

Table 6: Contributions to Joint Account

	British India	Princely State		Princely State	Princely State	
	Kekri	Sarwar	p-value	Sarwar	Shahpura	p-value
All Observations						
Contribution to Mixed	84.7	78.3	0.074	76.3	78.0	0.591
Group (Outsiders)	(3.24)	(2.52)		(2.67)	(2.87)	
As % of Endowment	*56%*	*52%*		*51%*	*52%*	
Contribution to Home	100.7	93.0	0.073	93.0	96.5	0.349
Group (Insiders)	(3.06)	(2.58)		(2.58)	(2.80)	
As % of Endowment	*67%*	*62%*		*62%*	*64%*	
More to Home (0/1)	0.40	0.41	0.720	0.41	0.40	0.760
	(0.04)	(0.03)		(0.03)	(0.03)	
Observations	154	200		200	200	
Parents are from Town						
Contribution to Mixed	85.8	77.3	0.055	76.3	78.7	0.530
Group (Outsiders)	(3.90)	(2.94)		(3.16)	(3.23)	
As % of Endowment	*57%*	*52%*		*51%*	*52%*	
Contribution to Home	96.9	93.5	0.528	93.5	94.9	0.733
Group (Insiders)	(3.40)	(3.06)		(3.06)	(3.20)	
As % of Endowment	*65%*	*62%*		*62%*	*63%*	
More to Home (0/1)	0.36	0.44	0.222	0.42	0.36	0.281
	(0.05)	(0.04)		(0.04)	(0.04)	
Observations	113	139		139	157	

Notes: Standard errors of mean in parentheses; p-values from Mann-Whitney-Wilcoxon test. The "Outsiders" decision in the Kekri vs. Sarwar comparison is Decision B, where participants from Kekri shared a group with those from Sarwar and vice versa. The "Outsiders" decision in the Sarwar vs. Shahpura comparison is Decision C, where participants from Sarwar shared a group with those from Shahpura and vice versa.

Figure 5 and Table 6 summarize the contributions to the joint account in the three towns, confirming the patterns seen in the histograms. The top panel of Table 6 shows that participants from (British) Kekri contribute more to *both* their co-townspeople as well as the mixed group relative to participants from

Figure 5: Average Contributions to Mixed-Town Groups, by Family Ties to Town
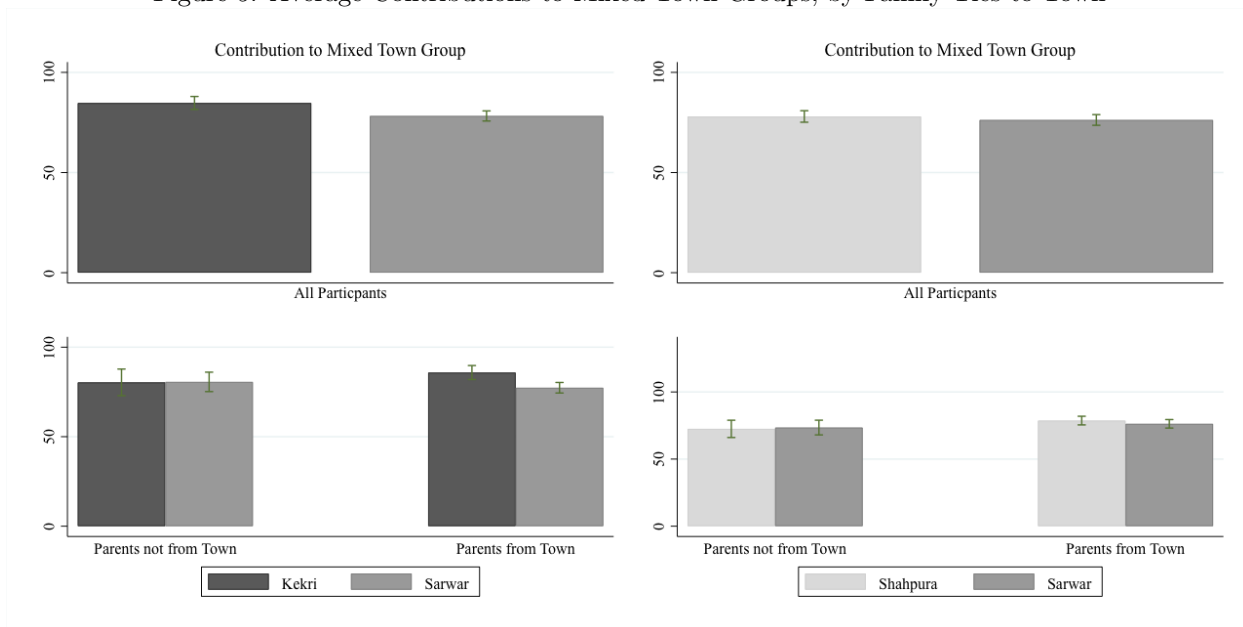
(Princely) Sarwar (p = 0.073 and 0.074).[22] None of the control comparisons between Sarwar and Shahpura are statistically significant.[23]

The bottom panel of Table 6 refines these findings, focusing only on participants who noted in the post-experiment survey that their parents are from the town.[24] This allows us to address the possibility that our results hold more strongly for participants whose parents (and previous generations) are from the town. The idea is that if the mechanism leading to more (or less) cooperation with outsider groups is on account of historical institutional differences, then we expect to observe differences based on a subject's family ties to the town. Indeed, we find that average contributions in outsider groups are much higher in (British) Kekri than in (Princely) Sarwar among participants whose parents are from the town (85.8 vs. 77.3, p = 0.055), while contributions to co-townspeople is not statistically different (96.9 vs. 93.5, p = 0.528). In the control group, the differences in contributions between participants from (Princely) Sarwar and (Princely) Shahpura are small in magnitude and statistically insignificant. We summarize the main results as follows.

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[22]The minimum detectable effect in the difference in contributions to the mixed group between Kekri and Sarwar ranges between 5.045 and 6.747, for a range of correlations between the samples of 0.1 to 0.5. Meanwhile, the minimum detectable effect in the difference in contributions to the mixed group between Kekri and Sarwar for those with parents from the town ranges from 6.048 to 8.059. This suggests that, for modest levels of correlation, the experiment is sufficiently powered to pick up the statistical significance highlighted in Table 6.

[23]In Appendix Tables A.3 and A.4, we limit the sample to only non-Muslims and non-SC/ST castes, respectively. Since the distributions of these cultural features are different among participants in different towns in the experiment, these results address whether our findings are simply being driven by demographic features. Yet, we find this not to be the case; results are very similar to those reported in Table 6.

[24]Separately, we also analyzed the contributions of participants whose parents are not from the town. While there are some statistically significant differences across towns, the N is too low in these comparisons to draw any meaningful conclusions. We hence do not show separate results for this split sample, but they are available upon request.

Result 1: Participants from (British) Kekri are more cooperative in in-groups and out-groups than those from (Princely) Sarwar. The latter result is driven by participants whose parents are from the town.

Result 2: There are no differences in in-group or out-group giving in the control comparison of (Princely) Sarwar and (Princely) Shahpura.

5.3 Regression Results

Our results above are simple comparisons of means. They do not control for the order of the experiments or individual characteristics. Such factors are likely correlated with an individual's decision-making. We therefore present results using ordered probit and individual fixed effect regressions.[25] The ordered probit regressions exploit cross-sectional variation across individuals controlling for their demographic characteristics. In our case, contributions are ordinal outcomes increasing from 0 (low) to 150 (high). Since we observe few individuals selecting 0, we combine 0 and 50 into a single category.

In Table 7, we show the results for the outsider mixed group in the top panel, and the co-townspeople group experiment in the bottom panel.[26] In the treatment group (Kekri and Sarwar), the outsider group is experiment B, while the outsider group is experiment C in the control group (Sarwar and Shahpura). The co-townspeople group is experiment A in both the treatment and control groups. All regressions include an indicator if the insider group experiment (A) was played second and a fixed effect for the ID of the experimenter (there were 10 total experimenters for all three towns). We cluster standard errors by town, experiment order, and the identification of the experimenter. This yields 22–24 clusters. Since there are relatively few clusters, we report bootstrapped standard errors. We report average marginal effects of the probability of contributing 100 and 150 rupees to the joint pot.[27]

We first analyze the top panel, which considers contributions to the mixed town group. Specifications (1a) and (1b) report results from the same ordered probit regression showing the average marginal effects on the Sarwar coefficients separately for 100 and 150 rupee contributions. In this regression, we do not include any demographic controls. Here, the coefficient on the Sarwar dummy shows that individuals from (Princely) Sarwar are about 5 percentage points less likely to contribute 100 and 150 rupees compared to individuals from (British) Kekri, although the results are not statistically significant.[28] When we include the demographic controls in specifications (2a) and (2b), the magnitude of the coefficient on the Sarwar dummy

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[25]Our results are robust to estimating linear probability models.

[26]In Appendix Table A.5, we report all regression coefficients in Table 7 for the mixed town regressions. We do not report them in the body for the sake of brevity.

[27]We ran similar regressions to those reported in Table 7, with one regression omitting Muslim participants and the other omitting SC/ST participants. These results are reported in Appendix Table A.6. The results are similar to those reported in Table 7.

[28]In all marginal effects calculations the other independent variables are held at their mean values.

Table 7: Ordered Probit, Contribution to Mixed Town and Co-townspeople Group

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Sample:	All		All		Parents from Town	
Marginal Effect:	100	150	100	150	100	150

Dep. Variable: Contribution to Mixed Town Group
Treatment Group (Kekri vs Sarwar)

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Sarwar	-0.050	-0.053	-0.077*	-0.082**	-0.116**	-0.117**
	(0.041)	(0.042)	(0.042)	(0.041)	(0.053)	(0.050)
Mean of DV:	83.20		83.20		83.73	
N	354		354		252	

Control Group (Sarwar vs Shahpura)

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Sarwar	-0.018	-0.021	-0.015	-0.017	-0.011	-0.012
	(0.048)	(0.051)	(0.047)	(0.050)	(0.053)	(0.053)
Demographic Controls	NO		YES		YES	
Mean of DV:	79.75		79.75		80.41	
N	400		400		296	

Dep. Variable: Contribution to Co-Townsperson Group
Treatment Group (Kekri vs Sarwar)

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Sarwar	-0.008	-0.063	-0.007	-0.049	0.001	0.006
	(0.009)	(0.063)	(0.010)	(0.068)	(0.017)	(0.075)
Mean of DV:	96.75		96.75		95.44	
N	354		354		252	

Control Group (Sarwar vs Shahpura)

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Sarwar	-0.006	-0.034	-0.003	-0.017	0.005	0.023
	(0.010)	(0.044)	(0.010)	(0.051)	(0.012)	(0.063)
Demographic Controls	NO		YES		YES	
Mean of DV:	95.63		95.63		95.27	
N	400		400		296	

Notes: Marginal effects of ordered probit regressions reported for probability of contributing 100 and 150. Bootstrapped standard errors clustered by town*experiment*experimenter ID order in parentheses. There are 22–24 clusters in each regression. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All regressions control for order effects and the experimenter ID. Demographic controls include indicators for female, age 15-25, married, less than upper secondary education, Muslim, and scheduled caste/scheduled tribe.

increases, indicating that individuals from (Princely) Sarwar are about 8 percentage points less likely to contribute 100 and 150 rupees compared to individuals from (British) Kekri. These results are statistically significant. Specifications (3a) and (3b) present the results only for individuals whose parents are from the town. The coefficient on the Sarwar dummy is even larger in magnitude and remains highly significant. In

the lower part of the top panel, we run similar regressions for the control group (Sarwar vs. Shahpura), using experiment (C) for the mixed town group. There are no statistically significant differences between towns.

In the bottom panel, we consider contributions to the co-townsperson group (experiment A). In all of these regressions, for *both* the treatment and the control groups, all results of interest are statistically insignificant. This suggests that, to the extent that our experiment had identified a treatment difference, it is in behavior towards outsiders, not co-townspeople.

In Table 8 we confirm the patterns observed in Table 7 using two other measures of a participant's ties to the town, namely whether their grandparents are from the town and whether they have lived their entire life in the town. Participants with strong ties to the town make lower contributions to mixed town outsider groups in (Princely) Sarwar compared to (British) Kekri. We do not observe such differences in the control comparison of Sarwar and Shahpura. In short, the results reported in Tables 7 and 8 broadly confirm the patterns observed in the comparison of means.

We can also exploit variation within individuals in our experimental set-up. Each individual played multiple single-shot games. This allows us to test if contributions in mixed town groups compared to home town groups are significantly lower for Sarwar participants compared to Kekri. In particular, we create a panel data set of just Sarwar and Kekri participants with two observations per individual: their contribution in experiment (A), the home town group, and their contribution in experiment (B), their mixed town group. We then run an individual fixed effects, OLS regression with the contribution to the joint account as the dependent variable. We include an indicator for mixed town experiment (which varies *within* individuals), an interaction of mixed town experiment with the Sarwar dummy, an interaction of mixed town and whether their parents are from the town, a triple interaction between the mixed town experiment, the Sarwar dummy, and whether their parents are from the town, and an indicator if the experiment was played first. Note that we drop the town dummy (e.g., Sarwar) and the parents from town dummy, since these do not vary by participant. We report p-values of clustered standard errors using the wild bootstrap method (Roodman et al. (2019)).

Table 9 shows the results for Kekri and Sarwar. Participants in both towns contribute lower amounts to mixed outsider groups than their insider groups. Contributions to mixed town groups are 13–27 rupees lower than home town contributions, depending on the specification. The effect is large and significant across the different samples. The key result is the triple interaction coefficient. Participants from Sarwar give less in mixed town groups *if their parents are from the town*. This result holds when other metrics of family ties are considered (grandparents from town, lived entire life in the town), although it is not statistically significant in the grandparent specification.

Table 8: Ordered Probit, Contribution to Mixed Town and Co-townspeople Group

Sample:	(1a)	(1b)	(2a)	(2b)
	Grandparents from Town		Entire Life in Town	
Marginal Effect:	100	150	100	150

DV: Contribution to Mixed Town Group

Treatment Group (Kekri vs Sarwar)

Sarwar	-0.090*	-0.090*	-0.094**	-0.108**
	(0.048)	(0.049)	(0.043)	(0.044)
Mean of DV:		85.34		83.70
N		191		270

Control Group (Sarwar vs Shahpura)

Sarwar	0.001	0.001	-0.015	-0.019
	(0.035)	(0.043)	(0.054)	(0.063)
Demographic Controls		YES		YES
Mean of DV:		83.48		80.72
N		227		319

DV: Contribution to Co-Townsperson Group

Treatment Group (Kekri vs Sarwar)

Sarwar	0.025	0.083	-0.001	-0.006
	(0.020)	(0.068)	(0.010)	(0.076)
Mean of DV:		93.72		97.22
N		191		270

Control Group (Sarwar vs Shahpura)

Sarwar	0.012	0.050	0.002	0.013
	(0.012)	(0.047)	(0.008)	(0.061)
Demographic Controls		YES		YES
Mean of DV:		94.27		96.55
N		227		319

Notes: Marginal effects of ordered probit regressions reported for probability of contributing 100 and 150. Bootstrapped standard errors clustered by town*experiment order*experimenter ID in parentheses. There are 22–24 clusters in each regression. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All regressions control for order effects and the experimenter ID. Demographic controls include indicators for female, age 15-25, married, less than upper secondary education, Muslim, and scheduled caste/scheduled tribe.

In Table 10 we show the individual fixed effect results for Sarwar and Shahpura. Here we are comparing the results in experiment (A) to the results in experiment (C). Participants in Sarwar and Shahpura also contribute less to their mixed town outsider group than to their home town insider group. But we find no

Table 9: Individual Fixed Effects OLS Regression, Contributions in Kekri and Sarwar

Dependent Variable: Contributions to Joint Pot				
Mixed	-12.985**	-26.909**	-23.223**	-21.640***
	(0.046)	(0.011)	(0.034)	(0.004)
Sarwar*Mixed	-1.015	19.731*	10.608	14.198
	(0.923)	(0.050)	(0.586)	(0.120)
Mixed*Parents from Town		19.678**		
		(0.021)		
Sarwar*Mixed* Parents from Town		-27.520**		
		(0.010)		
Mixed*Grandparents from Town			22.052	
			(0.150)	
Sarwar*Mixed* Grandparents from Town			-22.658	
			(0.193)	
Mixed*Entire Life in Town				11.402*
				(0.076)
Sarwar*Mixed* Entire Life in Town				-19.974**
				(0.045)
Mean of DV:	89.972	89.438	89.438	89.972
N	708	658	658	708
R^2	0.660	0.661	0.665	0.663

Notes: The observations are clustered at the individual*experiment level*experimenter ID. There are 38 clusters in each regression. In parentheses are p-values of wild cluster bootstrap based on 100,000 replications with Mammen weights using the Stata command boottest from Roodman et al. (2019). *** p<0.01, ** p<0.05, * p<0.1.

heterogeneous effects for Sarwar participants with family ties—the interaction and triple interaction effects for family ties are all statistically insignificant.

Table 10: Individual Fixed Effects OLS Regression, Contributions in Sarwar and Shahpura

Dependent Variable: Contributions to Joint Pot				
Mixed	-13.875**	-25.640**	-25.278**	-21.237*
	(0.036)	(0.011)	(0.018)	(0.068)
Sarwar*Mixed	0.750	15.144	9.286	13.086
	(0.928)	(0.122)	(0.469)	(0.120)
Mixed*Parents from Town		14.328		
		(0.124)		
Sarwar*Mixed* Parents from Town		-16.690		
		(0.124)		
Mixed*Grandparents from Town			18.746*	
			(0.091)	
Sarwar*Mixed* Grandparents from Town			-13.087	
			(0.230)	
Mixed*Entire Life in Town				8.943
				(0.386)
Sarwar*Mixed* Entire Life in Town				-15.366
				(0.201)
Mean of DV:	87.688	87.273	87.273	87.688
N	800	770	770	800
R^2	0.679	0.682	0.687	0.681

Notes: The observations are clustered at the individual*experiment level*experimenter ID. There are 28 clusters in each regression. In parentheses are p-values of wild cluster bootstrap based on 100,000 replications with Mammen weights using the Stata command boottest from Roodman et al. (2019). *** p<0.01, ** p<0.05, * p<0.1.

6   Why Would an Old Colonial Boundary Matter?

Why would an old colonial boundary affect norms of cooperation today? We believe that British colonial rule lead to more exposure to foreigners (British subjects), which in turn reduced out-group bias and promoted more trust of foreigners in (British) Kekri compared to (Princely) Sarwar. This combined with an early history of municipal taxation in (British) Kekri may account for our experimental results, namely higher contributions to mixed-town groups in (British) Kekri compared to (Princely) Sarwar among participants with family ties to the town. We elaborate on both these issues below.

Kekri had a larger British presence compared to (Princely) Sarwar and Shahpura. Although Europeans accounted for less than 1 percent of the population in colonial India, they lived in the towns of British India. British officials served as district officers, magistrates, and chairmen of municipal committees, interacting

regularly with the local population. This is especially true in the cities and small towns of colonial British India. In 1931, the province of Ajmer had 1,524 British subjects, of which 509 were residing in Ajmer city, the capital (Census of 1931). Since the province had only 5 towns, it is likely the 1,015 remaining British subjects were living in the other towns including Kekri.[29] In comparison, there was only one British subject living in the capital city of Kishangarh in Kishangarh Princely State in 1931. Foreigners were thus absent in (Princely) Sarwar and Shahpura.

Another contributing factor that may have reduced out-group bias in (British) Kekri was the strength of the Indian National Movement (Sisson 1972; Rudolph and Rudolph 1984). As the independence movement under Gandhi grew strong in the 1920s, the Rajputana States were slow to embrace and follow these larger movements of British India. Indeed, the popular British Indian newspapers did not circulate regularly in the Rajputana Princely states (Sisson 1972). However, (British) Kekri in Ajmer province was different. Here, national newspapers were commonplace as was nationalist literature, which was then smuggled out of the surrounding Princely States. Ajmer, and by association Kekri, was the British Indian enclave of Rajasthan. It was connected to the larger movements in British India. In contrast, the Rajputana states were segmented. They had less interaction with outside causes and people. According to Sisson (1972, p. 60), "unlike the British provinces, elites in the Rajputana states did not develop a statewide constituency prior to independence. Their support was regional and parochial, and this pattern of regional segmentation has been a persistent feature of Rajasthan's politics in the postindependence period."

People from (British) Kekri, thus, historically interacted with more outsiders and were part of larger national movements as compared to those from (Princely) Sarwar and Shahpura. If such historical exposure engendered stronger cultural norms for working with outsiders or reduced out-group bias, we would expect participants in (British) Kekri to be more cooperative in mixed outsider groups compared to (Princely) Sarwar and Shahpura. Indeed, we find participants from (British) Kekri with family ties to the town contribute more to mixed town groups compared to (Princely) Sarwar. We observe no such difference between the two Princely towns. Participants in Kekri may be contributing more than Sarwar because they anticipate Sarwar participants will contribute more than Sarwar participants anticipate Kekri participants will contribute. Or, it may be Kekri participants feel a stronger "warm-glow" towards Sarwar participants. Our simple experiments cannot identify and separate the more complex reasons underlying the lower out-group bias in (British) Kekri.

Apart from factors affecting out-group bias, (British) Kekri also had an earlier and more modern municipal board. The Kekri municipality was established in 1879. It funded itself via an octroi tax on consumption goods brought into the town. According to the Administration Report of Ajmer-Mewara for 1899–1900

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[29]The Census of 1931 does not record the number of Europeans in the other towns of Ajmer province.

(1901), octroi taxes accounted for 82 percent of municipal revenues. Kekri spent these municipal funds on fourteen categories of expenditures ranging from administration, lighting, police, and social public services such as medical dispensaries and schools. The board had nine nominated members that met two to four times a year.

Such municipal boards were less common in our experiment towns of Princely India. Even when they existed, as in Kishangarh city, there is no mention of town-level taxation. In both the Kishangarh and Shahpura Princely States, a majority of state revenues came from land taxes. A council of a few ministers would advise the ruler on revenue collection, judicial matters, and public expenditures. Decisions were more centralized in Princely towns compared to (British) Kekri. The historical records mention a municipal committee established in Kishangarh, the capital city of Kishangarh, but there is no mention of such a committee in Sarwar. Even in the capital city the committee provided fewer services as compared to in Kekri. Per the Imperial Gazetteer (1908), the Kishangarh municipal committee, established in 1886, managed lighting, conservancy, and slaughter-house arrangements. Schools and hospitals were funded directly by the state out of its revenues. As of 1908, Shahpura did not have a municipal board or similar committee. Here again the ruler made spending decisions relying on one advisor. There is no mention of local town-specific taxes to fund local services. Such early exposure to municipal taxation and foreigners thus suggest a plausible historical mechanism for the experimental results.

Although our experiments cannot pin down the precise historical mechanism, we can rule out some alternative explanations. First, our results are unlikely to be driven by differences in contemporary public goods provision or demography. We have suggestive evidence that household perceptions of police performance are similar across (British) Kekri and (Princely) Sarwar.[30] (British) Kekri has a few more schools with 2 schools per 1000 people compared to 1.6 for (Princely) Sarwar and 1.7 for (Princely) Shahpura. Kekri has 2.4 hospital beds per 1000 people compared to 2 for Sarwar and 1.7 for Shahpura (Census of India 2011). Yet, it is unlikely these differences are driving the differences in cooperative norms. For one they are small differences. Moreover, we observe no differences between (Princely) Sarwar and (Princely) Shahpura even though they also have small differences in the provision of schools and hospital beds. Rather, history seems important because of the differences between participants with family ties to the towns. This also

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[30]By chance, a JPAL research team conducted household surveys in Rajasthan in the 2000s asking questions on perception of police performance (Banerjee et al., 2012). They surveyed over 2,000 individuals in 162 police stations covering 11 districts. Data without any town-level identifiers are publicly available at https://dataverse.harvard.edu/dataset.xhtml?persistentId=hdl:1902.1/17050. Dan Keniston, a study author, graciously shared the town identifiers with us. In their baseline survey, the JPAL team surveyed 16 households in Kekri and 16 in Sarwar. We find no significant across-town difference in responses to the four performance questions. They are (1) "Do the police help citizens when they are required?", (2) "How quick is the police response to distress calls by citizens?", (3) "Is it easy or difficult to register an FIR?", and (4) "How does the performance of the police compare to other government agencies". We also coded all the towns in their data into former British India and Princely India. Again, we find no significant differences in perception of police performance across British India and Princely India.

suggests contemporary demographic differences are perhaps not driving the results because we find similar experimental results for the non-Muslim and non-SC/ST sub-samples.

Second, our results are unlikely to be driven by more extractive institutions as suggested Acemoglu, Johnson, and Robinson (2001). They argue that European colonizers established more extractive institutions in places with high settler mortality where Europeans were unlikely to settle in large numbers. Extractive institutions tend to be correlated with weak property rights and low provision of public goods (Dell 2010). In our context this argument would suggest more extractive institutions in (British) Kekri. Yet, property rights in our towns, as in colonial India, were not weak. Indian firms did not fear colonial expropriation (Roy 2011, Roy and Swamy 2016, Roy 2017). And, as we discuss above, (British) Kekri had an earlier history of public goods provision.

How do our results fit larger debates on the effects of colonialism in India? While scholars argue in favor of both positive effects (Ferguson 2003) and negative effects (Bagchi 1982), Iyer (2010) offers perhaps the most credible empirical evidence comparing the performance of British Indian districts to Princely Indian districts. After controlling for the selection of districts into British India, she finds that areas under direct colonial rule have worse economic outcomes after independence compared to areas under indirect rule (Princely States). In her study, Princely States do not have better outcomes because of higher taxes or political engagement. Rather, Princely States were better governed because their Indian rulers feared British annexation. Her results do not necessarily generate clear predictions for cultural norms of cooperation. While better governance in Princely India may have engendered norms to follow rules, it is unclear if better governance is a complement or substitute to cultural norms promoting cooperation. For example, Lowes et al. (2017) find that people from the historical Kuba Kingdom in Central Africa are less likely to follow rules and more likely to cheat compared to people from just outside the Kingdom. Similarly, Lowes and Montero (2018) find that extractive institutions (concessions given to Europeans) in the Democratic Republic of Congo in the late 19th century are associated with a number of worse outcomes today, including public good provision. However, experimental results suggest that people living within the old extractive zones are more trusting and feel closer to "others." Their findings support theoretical work by Tabellini (2008) on the interaction between external rules and the values parents choose to pass on to their children. In some contexts, cultural norms that parents pass to their children complement the formal rules, in other contexts they are substitutes.

Apart from questions about the interaction between cultural norms and formal rules, issues of external validity affect both our study and that of Iyer (2010). Unlike our focus on towns in Rajasthan, Iyer's study does not exploit any variation between British India and Princely India within Rajasthan. Her identification comes from Princely States in Central and Western India. Moreover, the argument that Princely States were

better governed because they feared annexation is not relevant to our context. Indeed, the Princely States in our study were too small to fear British annexation. Their rulers were never reprimanded for misrule or, at least, the historical records do not mention the British discussing governance in these states. It may well be Rajasthan is different, or that Iyer's results do not generalize to Princely States outside Central and Western India.

While we cannot replicate our experiment in other Indian towns, we present suggestive evidence from the World Values Survey that speaks to larger differences in trust and collectivism across British and Princely India more generally. The World Values Survey is a global survey of around 100 countries where respondents are asked about their attitudes and perceptions. The survey has been extensively used in the literature on trust in economics (see for example, Knack and Keefer (1997), Fisman and Khanna (1999), and Dearmon and Grier (2009)). Almost all studies use the answer to the question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?", with the answer "Most people can be trusted" coded as 1 and the other possible answer "Need to be very careful" coded as 0. Johnson and Mislin (2012) find that this measure correlates well with experimental measures of trust.

We draw on the fourth wave of the survey conducted in India in 2001. We use the 2001 wave because it is the last wave with district-level identifiers. The survey samples 2,002 respondents spread across 40 districts in 18 states. Thirteen out of the 40 districts were historically part of Princely India, corresponding to 667 respondents from Princely India and 1,302 respondents from British India.[31] Using these data we estimated the following specification:

$$Trust_{ijk} = \alpha + \beta Princely_{jk} + \mathbf{X}_{jk} + \delta_k + \epsilon_{ijk}$$

Here, $Trust_{ijk}$ is the response of individual i in district j in state k to the question on trust in the survey, coded as a binary variable as mentioned earlier. We coded a small number of respondents who did not answer as missing.[32] $Princely_{jk}$ is a binary variable that takes a value of 1 if district j in state k was part of a Princely state. $\mathbf{X}_{jk}$ is a vector of district-level geographical controls including altitude, latitude, soil type, rainfall and whether or not the district is on the coast, taken from Iyer (2010), and δ_k denotes state fixed effects.[33]

In addition to "trust" we construct another measure of societal cooperation using the same survey data, following Olsson and Paik (2016). Their study classifies societies into collectivist and individualist using

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[31]33 respondents had codes that could not be matched with any district from the codebook. These observations were dropped from the sample.

[32]Coding these individuals as zero did not change the results.

[33]The control variables were not available for three of the states, leading to a reduction in the number of observations when they are included.

responses to two other WVS questions. The degree of collectivism in the society is indicated by the fraction of people who include "obedience" as an important quality that children should be encouraged to learn. Individualism is indicated by how strongly people feel that they have free choice and control over their lives. People respond on a scale of 1 to 10. Responses of 6 and above were coded as 1, and others as 0. Following Olsson and Paik (2016), we construct the variable $Collectivism - Individualism$ as the difference between the two responses to test whether districts in former Princely India are less cooperative than those in British India.

Table 11 presents these results. Column (1) shows that respondents in districts that were part of former Princely states are 19.5 percentage points less likely to say that they trust other people. This remains almost unchanged with the addition of controls (column (2)). This is a large effect compared to the average response of 41% across all of India. Columns (3) and (4) show regressions with $Collectivism - Individualism$ as the dependent variable. Unlike trust, the coefficient on Princely States is of smaller magnitude after we include the controls. Yet, it is negative and statistically significant. The coefficient in column (4) suggests that the average value of the $Collectivism - Individualism$ variable is lower in Princely states by 0.04. This is a large effect compared to the average value overall of -0.11. This result shows that districts under direct British rule report significantly more collectivist and less individualistic attitudes than those under Princely states.

Table 11: Trust and Collectivism, World Values Survey Results

	(1)	(2)	(3)	(4)
			Collectivism -	Collectivism -
	Trust	Trust	Individualism	Individualism
Princely State	-0.195***	-0.196***	-0.282***	-0.044***
	(0.037)	(0.062)	(0.053)	(0.008)
State FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
N	1865	1696	1682	1527

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Controls include altitude, latitude, soil type, rainfall and whether or not the district is on the coast. The variation in number of observations is because of omission of "don't know" responses.

While these WVS variables do not explicitly test for out-group bias, they complement our experimental findings. These results indicate that respondents in formerly British India exhibit more trust and collectivist attitudes than those in formerly Princely India. Such differences in cooperative norms and trust may in part be explained by their colonial history, similar to our experimental results.

7 Conclusion

This paper exploits a natural experiment along a historical boundary to study whether norms derived from historical settings persist in the long run. We run a lab-in-the-field public goods game in three towns along a former border separating colonial British India from Princely India. The relative arbitrariness of the border placement—the towns in question were not of commercial or strategic importance to the British—along with their similar demographic characteristics suggest that this is an ideal setting to test the persistence of cultural norms derived in the colonial period.

Our experiment finds that participants from the Princely India side of the border contribute lower amounts to a joint account when grouped with both co-residents and outsiders compared to participants from the British India side. When we split the participants by their family ties to the towns, we find that the latter results are driven by participants whose parents are from these towns. This suggests that a vertical, inter-generational cultural transmission mechanism exists to some degree. We conjecture that older generations of townspeople exposed to more foreigners and other parts of British India passed these values to their children and grandchildren. This perhaps accounts for the lower out-group bias we observe today in (British) Kekri.

Our results clearly permit alternative hypotheses. For one, should there be idiosyncratic differences in these towns for some reason beyond those proposed in our paper, our results would be spurious. Moreover, external validity is not obvious; after all, these are simply the results from public good games played in three Indian towns. However, there are numerous reasons to believe that our results are reflective of cultural transmission. First, the strongest results regarding out-group cooperation only hold for participants with family ties to the town for whom the old colonial border would be salient. Second, there is a large literature on the persistent effects of colonialism which suggests that cultural characteristics formed under colonial rule persist, for better or worse (e.g., Nunn and Wantchekon 2011). This paper provides more evidence in this direction, while employing a new identification strategy. Third, the experiment was run double-blind, so the experimenters could not subconsciously affect the outcomes in favor of the proposed hypotheses.

Although we do not wish to push the results from an experiment in three Indian towns too far, they carry implications for the literature on institutions and long-run growth. Most importantly, our results suggest that culture can persist despite changes in the institutional setting that were responsible for those cultural attributes in the first place. Hence, to the extent that a society's "informal institutions" impinge on its formal institutions, institutions that "work" in one society may not work in another. In other words, historical processes not only shape the lens through which people view the world, but also shape how they respond to the incentives and constraints they face in their economic and social interactions.

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A Appendix: Robustness Checks

Table A.1: Differences Between Kekri Participants, Oct 6–7 and Oct 20

	Oct 6–7 Round	Oct 20 Round	p-value
Contribution to Mixed Town Group (Sarwar)	84.74	58.70	0.000
Contribution to Mixed Town Group (Shahpura)	81.49	52.17	0.000
Contribution to Co-Townspeople Group	100.65	86.96	0.029
Female	0.46	0.35	0.175
Age Under 25	0.34	0.30	0.617
Married	0.68	0.80	0.109
Less Than High School	0.56	0.59	0.792
Muslim	0.03	0.07	0.321
SC/ST	0.55	0.57	0.814
Self-Employed	0.31	0.74	0.000
Unpaid Family Worker	0.29	0.04	0.001
Regular Wage Worker	0.16	0.11	0.427
Casual Wage Laborer	0.09	0.00	0.034
Student	0.11	0.09	0.650
Employer	0.01	0.00	0.585
Seeking Work	0.04	0.02	0.578
Parents from Village	0.80	0.87	0.299
Lived in Village Entire Life	0.76	0.85	0.207
Know Someone from Other Town	0.54	0.30	0.005
Trust Co-townspeople (1-5)	4.14	3.89	0.006
Trust Outsiders (1-5)	3.42	3.13	0.011
Observations	154	46	

Notes: p-values from Mann-Whitney-Wilcoxon test.

Table A.2: Summary Statistics, Personal Finance

Town	Bank Account	Borrowed from Co-Townsp.	Lent to Co-Townsp.	Borrowed from Outsider	Lent to Outsider	Use Microfinance
Kekri (BI)	0.63	0.20	0.23	0.11	0.14	0.08
N = 154	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)
Sarwar (PS)	0.73	0.24	0.26	0.11	0.11	0.14
N = 200	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
Shahpura (PS)	0.70	0.26	0.23	0.07	0.11	0.07
N = 200	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
	p-values: Mann-Whitney-Wilcoxon test					
Kekri-Sarwar	0.044	0.387	0.479	0.871	0.354	0.068
Kekri-Shahpura	0.165	0.236	0.952	0.183	0.354	0.777
Sarwar-Shahpura	0.507	0.729	0.486	0.216	1.000	0.023

Notes: Standard errors of mean in parentheses. * $p < 0.05$; ** $p < 0.01$.

Table A.3: Contributions to Joint Account, Non-Muslims

	British India	Princely State		Princely State	Princely State	
	Kekri	Sarwar	p-value	Sarwar	Shahpura	p-value
Contribution to Mixed	84.6	78.0	0.121	74.6	78.8	0.382
Group (Outsiders)	(3.30)	(3.10)		(3.02)	(4.02)	
As % of Endowment	*56%*	*52%*		*50%*	*53%*	
Contribution to	101.3	93.6	0.101	93.6	97.8	0.323
Insider Group	(3.08)	(3.24)		(3.24)	(3.86)	
As % of Endowment	*68%*	*62%*		*62%*	*65%*	
More to Home (0/1)	0.40	0.42	0.812	0.45	0.38	0.232
	(0.04)	(0.04)		(0.04)	(0.05)	
Observations	149	132		132	111	
Parents are from Town						
Contribution to Mixed	85.7	76.1	0.066	73.3	78.4	0.340
Group (Outsiders)	(4.00)	(3.44)		(3.37)	(4.40)	
As % of Endowment	*57%*	*51%*		*49%*	*52%*	
Contribution to	97.7	95.6	0.729	95.6	95.3	0.921
Insider Group	(3.44)	(3.84)		(3.84)	(4.24)	
As % of Endowment	*65%*	*64%*		*64%*	*64%*	
More to Home (0/1)	0.37	0.47	0.172	0.50	0.36	0.051
	(0.05)	(0.05)		(0.05)	(0.05)	
Observations	108	90		90	95	

Notes: Standard errors of mean in parentheses; p-values from Mann-Whitney-Wilcoxon test. The "Outsiders" decision in the Kekri vs. Sarwar comparison is Decision B, where participants from Kekri shared a group with those from Sarwar and vice versa. The "Outsiders" decision in the Sarwar vs. Shahpura comparison is Decision C, where participants from Sarwar shared a group with those from Shahpura and vice versa.

Table A.4: Contributions to Joint Account, Non-SC/ST

	British India	Princely State		Princely State	Princely State	
	Kekri	Sarwar	p-value	Sarwar	Shahpura	p-value
Contribution to Mixed	92.9	78.9	0.012	77.4	75.2	0.605
Group (Outsiders)	(5.01)	(2.90)		(3.08)	(3.22)	
As % of Endowment	*62%*	*53%*		*52%*	*50%*	
Contribution to	102.1	94.0	0.144	94.0	95.4	0.746
Insider Group	(4.49)	(2.90)		(2.90)	(3.05)	
As % of Endowment	*68%*	*63%*		*63%*	*64%*	
More to Home (0/1)	0.31	0.41	0.176	0.41	0.42	0.865
	(0.06)	(0.04)		(0.04)	(0.05)	
Observations	70	159		159	153	
Parents are from Town						
Contribution to Mixed	98.0	78.1	0.003	76.8	74.8	0.700
Group (Outsiders)	(6.00)	(5.15)		(3.58)	(3.57)	
As % of Endowment	*65%*	*52%*		*51%*	*50%*	
Contribution to	99.0	95.1	0.557	95.1	93.2	0.700
Insider Group	(5.15)	(3.35)		(3.35)	(3.48)	
As % of Endowment	*66%*	*63%*		*63%*	*62%*	
More to Home (0/1)	0.27	0.44	0.039	0.43	0.38	0.499
	(0.06)	(0.05)		(0.05)	(0.05)	
Observations	49	112		112	117	

Notes: Standard errors of mean in parentheses; p-values from Mann-Whitney-Wilcoxon test. The "Outsiders" decision in the Kekri vs. Sarwar comparison is Decision B, where participants from Kekri shared a group with those from Sarwar and vice versa. The "Outsiders" decision in the Sarwar vs. Shahpura comparison is Decision C, where participants from Sarwar shared a group with those from Shahpura and vice versa.

Table A.5: Ordered Probit, Contribution to Mixed Town Group

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Sample:	All		All		Parents from Town	
Marginal Effect:	100	150	100	150	100	150

Dep. Variable: Contribution to Mixed Town Group

Treatment Group (Kekri vs Sarwar)

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Sarwar	-0.050	-0.053	-0.077*	-0.082**	-0.116**	-0.117**
	(0.041)	(0.042)	(0.042)	(0.041)	(0.053)	(0.050)
Order	0.019	0.020	0.017	0.018	0.035	0.035
	(0.035)	(0.035)	(0.034)	(0.034)	(0.041)	(0.039)
Female			-0.050**	-0.053**	-0.040	-0.040
			(0.020)	(0.026)	(0.028)	(0.030)
Age 15–25			0.003	0.004	-0.024	-0.025
			(0.030)	(0.032)	(0.033)	(0.035)
Married			-0.015	-0.016	-0.030	-0.031
			(0.031)	(0.033)	(0.035)	(0.040)
Less that upper secondary education			0.006	0.007	-0.011	-0.011
			(0.028)	(0.030)	(0.029)	(0.029)
Muslim			0.011	0.011	0.036	0.036
			(0.032)	(0.035)	(0.044)	(0.046)
SC/ST			-0.060**	-0.064**	-0.095***	-0.095***
			(0.29)	(0.029)	(0.030)	(0.032)
Mean of DV:	83.20		83.20		83.73	
N	354		354		252	

Control Group (Sarwar vs Shahpura)

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Sarwar	-0.018	-0.021	-0.015	-0.017	-0.011	-0.012
	(0.048)	(0.051)	(0.047)	(0.050)	(0.053)	(0.053)
Order	-0.018	-0.021	0.033	0.037	0.039	0.040
	(0.035)	(0.039)	(0.048)	(0.051)	(0.057)	(0.054)
Female			-0.016	-0.018	0.007	0.007
			(0.017)	(0.023)	(0.031)	(0.032)
Age 15–25			-0.029	-0.032	-0.017	-0.018
			(0.042)	(0.042)	(0.065)	(0.064)
Married			-0.037	-0.043	-0.017	-0.018
			(0.025)	(0.029)	(0.036)	(0.037)
Less that upper secondary education			-0.059**	-0.067**	-0.061**	-0.062**
			(0.026)	(0.034)	(0.029)	(0.030)
Muslim			0.015	0.017	0.031	0.032
			(0.019)	(0.023)	(0.027)	(0.031)
SC/ST			0.030	0.034	0.052*	0.054
			(0.024)	(0.027)	(0.031)	(0.033)
Mean of DV:	79.75		79.75		80.41	
N	400		400		296	

Notes: Marginal effects of ordered probit regressions reported for probability of contributing 100 and 150. Bootstrapped standard errors clustered by town*experiment*experimenter ID order in parentheses. There are 22–24 clusters in each regression. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All regressions control for order effects and the experimenter ID.

Table A.6: Ordered Probit, Kekri versus Sarwar, Non-Muslims, Non-SC/ST

	Non-Muslim				Non-SC/ST			
Sample:	All		Parents from Town		All		Parents from Town	
Marginal Effect:	100	150	100	150	100	150	100	150
Dependent Variable: Contribution to Mixed Town Group								
Sarwar	-0.079*	-0.086*	-0.128**	-0.126**	-0.078*	-0.110**	-0.111*	-0.160**
	(0.046)	(0.051)	(0.053)	(0.055)	(0.041)	(0.046)	(0.063)	(0.070)
Mean of DV:	83.99		84.34		85.15		86.34	
N	281		198		229		161	
Dependent Variable: Contribution to Co-Townsperson Group								
Sarwar	-0.005	-0.066	-0.001	-0.010	-0.007	-0.052	-0.001	-0.007
	(0.008)	(0.054)	(0.010)	(0.072)	(0.010)	(0.060)	(0.012)	(0.074)
Mean of DV:	98.04		96.97		96.94		96.58	
N	281		198		229		161	
Demographics	YES		YES		YES		YES	

Notes: Marginal effects of ordered probit regressions reported at contributions of 100 and 150. Bootstrapped standard errors clustered by town*experiment order*experimenter ID in parentheses. There are 21–24 clusters in each regression. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All regressions control for order effects and the experimenter ID. Demographic controls include indicators for female, age 15-25, married, and less than upper secondary education.

B Experiment Instructions and Materials

In this Appendix, we provide a sample of the instructions that were given to participants from Kekri in Experiment A. Experiments B and C instructions were shorter and similar, with the only difference being the town names of the group members. Instructions for Sarwar and Shahpura were identical, with only town names changed.

B.1 Instructions

This is an experiment in how people make decisions conducted by Nielsen India, an economics research firm based in India. They are conducting this experiment on behalf of researchers in India, the UK, and the USA. The instructions are as follows.

You will receive 100 rupees simply for participating in the experiment. If you follow the instructions carefully, you have the potential to earn more than this. One of the Nielsen team members will collect your decisions from the experiment, and a different Nielsen team member will calculate how much you earned during the experiment. You will be paid for participating in the experiment today and the experimenter will return in one week to pay you the amount you earned during the experiments.

There are 200 participants taking place in the experiment from Kekri. You and the other participants will be placed into groups of 4. You will not be told the names of those in your group and they will not be told your name. All participants have identical instructions.

You are part of a group of four people. Each member of your group will begin the game with 150 rupees. You have the option to put that money into a personal pot or a joint pot that you share with your fellow group members. You can put 0, 50, 100 or 150 rupees into the joint pot, and you keep the rest.

Your income is the amount of money you put in your personal pot (150 – your contribution to the **joint pot**) + your equal share of twice the **joint pot** contribution by the four team members (the experimenter will double the total **joint pot** contribution of your team and then each member will receive an equal share from the **joint pot**).

Before you receive your income, you make one decision: how much to contribute to the joint pot.

B.1.1 Your Decision

You will be given a handout that asks you to circle the amount you want to contribute to the **joint pot**. For example, if you want to give 50 rupees to the **joint pot**, you should circle 50 as in the example below:

0   (50)   100   150

You keep any money you do not put into the joint pot. So, if you choose to put 50 rupees into the joint pot, as in the above example, you will keep 100 rupees in your personal pot.

B.1.2   Your Income from the Joint Pot

As explained before, for each group member the income from the **joint pot** is determined as follows:

Your **income** from the **joint pot** =

$\frac{1}{2}$ * total rupees put into the **joint pot** by you and all of your group members

For example, if the sum of all contributions—including yours—to the joint pot is 400 rupees, then the experimenter doubles the 400 rupees to 800 and you receive your share of 800 rupees, which equals to 200 rupees each from the **joint pot**. If the four group members together put 300 rupees into the **joint pot**, you and all others will get an equal share of 150 rupees each from the **joint pot**. One week after the experiment ends, you will be paid in cash your share of the **joint pot** money plus your **personal pot** money that you did not contribute to the **joint pot**.

B.1.3   Your Total Income

Your total income is the sum of your income from the **joint pot** and the amount you did **not** contribute to the **joint pot**.

Total Income =

Income from the **joint pot**
$= \frac{1}{2}$ * (total contributions from all group members to the joint pot)

+

Income from your **personal pot**
[150 rupees − your contribution to the **joint pot**] .

B.1.4   Examples

We will now take you through some examples of how the experiment could proceed. For each example, we have created diagrams to help your understanding.

Note: Please see Appendix B.4 for a pictorial representation of Example 1.

EXAMPLE 1: Suppose you contributed 50 rupees to the joint pot, and other members in your group contributed 50, 150 and 100 rupees to the joint pot. Then the total joint pot contribution is (50+50+150+100) = 350 rupees. All group members will therefore earn their equal share of half the total joint pot contribution, which is $\frac{1}{2}$ * 350 = 175 rupees. Since you contributed 50 rupees to the joint pot and kept 100 rupees for your personal pot, your total income is 100 + 175 = 275 rupees.

EXAMPLE 2: Suppose you contributed 0 rupees to the joint pot and the other members in your group contributed 150 rupees each to the joint pot. Then the total joint pot contribution is (0+150+150+150) = 450 rupees. All group members will therefore earn their equal share of half the total joint pot contribution, which is $\frac{1}{2}$ * 450 = 225 rupees. Since you did not contribute anything to the joint pot and kept 150 rupees for your personal pot, your total income is 150 + 225 = 375 rupees.

EXAMPLE 3: Suppose you contributed 150 rupees to the joint pot and the other members in your group contributed 0 rupees each to the joint pot. Then the total joint pot contribution is (150+0+0+0) = 150 rupees. All group members will therefore earn their equal share of half the total joint pot contribution, which is $\frac{1}{2}$ * 150 = 75 rupees. Since you contributed 150 rupees to the joint pot and kept 0 rupees for your personal pot, your total income is 0 + 75 = 75 rupees.

The experimenter will now give you a short **quiz** to test your understanding of the experiment.

Note: The quiz is located in Appendix B.2.

B.1.5   Playing the Game

You have been randomly matched with a group of three other people from Kekri.

The experimenter will now hand you a worksheet. On this worksheet, please circle your Decision for how much you will contribute to the joint pot. If you have any questions, please raise your hand and an experimenter will answer your question.

You will play this game only once.

B.2   Experiment Quiz

The purpose of this quiz is to make you familiar with the calculation of incomes that come from different decisions about the allocation of 150 rupees.

1) Each group member has 150 rupees. Assume that none of the four group members (including you) contributes anything to the joint pot.

    a) What will your total income be? _____

    b) What is the total income of each of the other group members? _____

2) Each group member has 150 rupees. Assume that you put 150 rupees into the joint pot and each of the other group members puts 150 rupees into the joint pot.

    a) What will your total income be? _____

    b) What is the total income of each of the other group members? _____

3) Each group member has 150 rupees. Assume that the other three group members together contribute a total of 250 rupees to the joint pot.

    a) What is your total income if you contribute 0 rupees to the joint pot? _____

    b) What is your total income if you contribute 50 rupees to the joint pot? _____

    c) What is your total income if you contribute 150 rupees to the joint pot? _____

B.3 Experiment Survey

Note: This survey was given in Kekri. The surveys given in Sarwar and Shahpura were similar, with only the order and wording of questions 5-7, 18-21, and 23-29 changed to reflect the town in which the survey was conducted.

Please fill out this brief survey by circling the answer that most accurately applies. If there is a line next to a question, please enter your answer on the line. Your entries are confidential: none of the information in this survey will ever be matched to your name or shared with anybody outside of those conducting the experiment.

1) What is your gender?
   a. Male
   b. Female

2) What is your age?
   a. 15-25
   b. 25-40
   c. 40-55
   d. 55-70
   e. 70 or older

3) What is your marital status?
   a. Single
   b. Married
   c. Divorced
   d. Widowed
   e. Other

4) What is the highest level of education you completed?
   a. Up to Class 5
   b. Class 5 to Class 9
   c. Class 10
   d. Class 12
   e. Pre-University/College
   f. University/College

5) Have you lived in Kekri your entire life?
   a. Yes
   b. No

6) If you answered "No" to Question 5, how long have you lived in Kekri? _____

7) To your knowledge, how long has your family lived in Kekri?
   a. You moved to Kekri during your lifetime
   b. Your parents moved to Kekri
   c. Your grandparents moved to Kekri
   d. Your great-grandparents or an older generation moved to Kekri
   e. I don't know

8) Do you live in a joint family?
   a. Yes
   b. No

9) What is your primary occupation?
   a. Own account worker (self-employed)
   b. Unpaid family worker
   c. Regular salaried or wage worker
   d. Casual wage labourer
   e. Employer
   f. Seeking and/or available for work

10) What is your religion?
   a. Hindu
   b. Muslim
   c. Christian
   d. Jain
   e. Sikh
   f. None/non-religious
   g. Other (please list) _____

11) Is your caste SC, ST, OBC or Other?
   a. SC
   b. ST

50

c. OBC

d. Other _____

12) What is your sub-caste, i.e., jati?

_____

13) How often do you attend religious services?
   a. Never
   b. Once or twice a year (or less)
   c. Several times a year
   d. Once a month
   e. 2-3 times a month
   f. Weekly
   g. Several times a week

14) Do you attend religious services in a place of worship (temple, mosque, gurudwara) or do you mainly pray at home?
   a. Attend services
   b. Mainly pray at home
   c. Both

15) Do you think that education (schooling) is well-provided for in your town?
   a. Yes
   b. No
   c. Not sure

16) Do you think that health-care (primary health clinic) is well-provided for in your town?
   a. Yes
   b. No
   c. Not sure

17) Do you have a bank account?
   a. Yes
   b. No

18) Have you ever borrowed money from someone outside of your family living in Kekri?
   a. Yes
   b. No

19) Have you ever lent money to someone outside of your family living in Kekri?

a. Yes

b. No

20) Have you ever borrowed money from someone living outside of Kekri?
   a. Yes
   b. No

21) Have you ever lent money to someone living outside of Kekri?
   a. Yes
   b. No

22) Do you use a microfinance scheme?
   a. Yes
   b. No

23) How trustworthy, in general, do you think the people of Kekri are?
   a. Extremely trustworthy
   b. Somewhat trustworthy
   c. Uncertain
   d. Somewhat untrustworthy
   e. Extremely untrustworthy

24) Do you know anybody from Sarwar?
   a. Yes
   b. No

25) How trustworthy, in general, do you think the people of Sarwar are?
   a. Extremely trustworthy
   b. Somewhat trustworthy
   c. Uncertain
   d. Somewhat untrustworthy
   e. Extremely untrustworthy

26) Do you know anybody from Shahpura?
   a. Yes
   b. No

27) How trustworthy, in general, do you think the people of Shahpura are?
   a. Extremely trustworthy
   b. Somewhat trustworthy

c. Uncertain

d. Somewhat untrustworthy

e. Extremely untrustworthy

28) Did you make choices differently when your partner was from Kekri than when they were from Sarwar?

    a. Yes

    b. No

29) Did you make choices differently when your partner was from Kekri than when they were from Shahpura?

    a. Yes

    b. No

30) If you answered "Yes" to Question 28 or 29, why did you make your choices differently? Please answer below, and use as much space as needed.
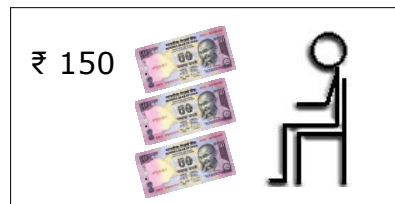
31) Why did you participate in this experiment?

B.4 Pictorial Example

In this Appendix, we include the eight pictorials that experimenters showed to subjects while explaining example number 1 in the instructions. Similar pictorials were used for examples 2 and 3, with different rupee amounts corresponding to the examples.

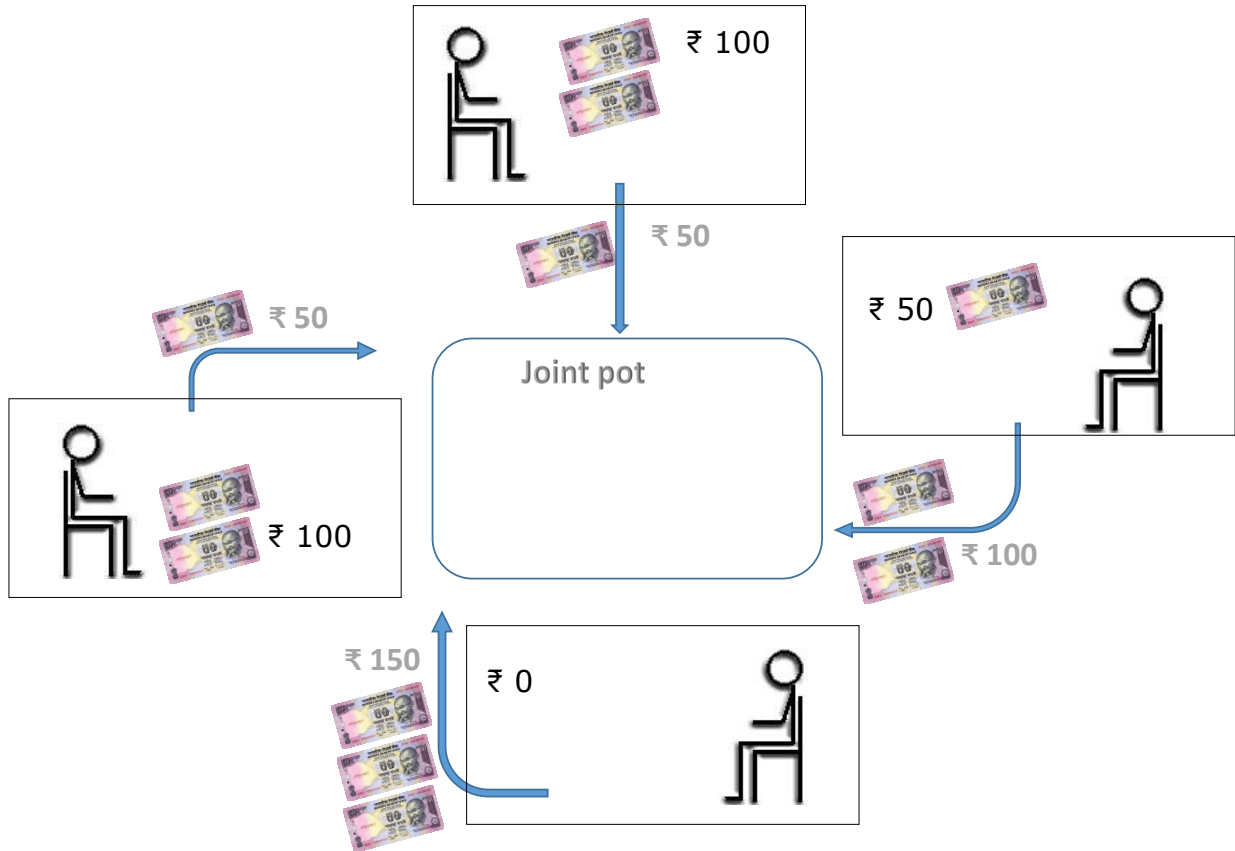

There are 4 members in the group

Each member is given ₹ 150 in their personal pots

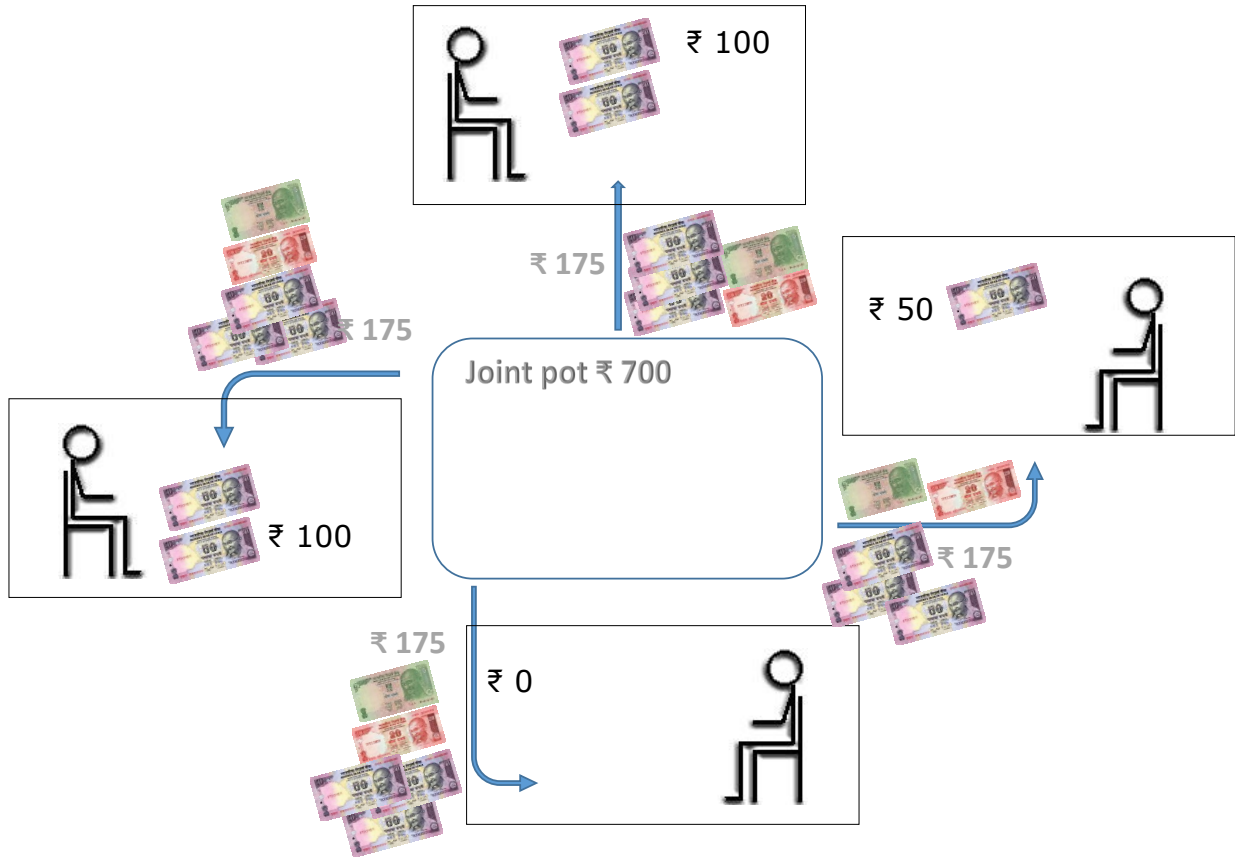# There is a joint pot for the group

Each member decides how much to contribute without knowing what the other members are contributing

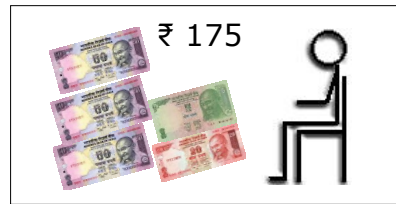All the contributions add up in the joint pot and each member retains the remaining amount in their personal pot

₹ 100

₹ 50

₹ 100

Joint pot ₹ 700

₹ 0

The joint pot amount gets doubled

The doubled amount is equally distributed between the four members

₹ 275

₹ 225

₹ 275

₹ 175

Each member ends up with the sum of the amount received from the joint pot and whatever he/she had retained in their personal pot