Cultural Transmission and the Colonial Legacy:

Evidence from Public Good Games Along a Historical Border∗

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Abstract

We conduct a standard public goods game in three small towns in the Indian state of Rajasthan. Until independence in 1947, these towns were assigned to (barely) opposite sides of a colonial border separating British India from the Princely States. One town fell on the British India side of the border on account of historical military conquest, unrelated to any geographic or commercial advantages. In line with the historical literature, we conjecture that past institutional differences related to the presence of outsiders and local governance between the Princely States and British India in Rajasthan engendered cultural differences regarding willingness to free ride on publicly provided goods, especially in the presence of “outsiders.” If this conjecture is correct, our experiment permits a test of whether such cultural differences were passed on inter-generationally; the towns have been under similar governance structures for decades, suggesting the modern institutions cannot account for any observed differences. We find that participants of the former Princely State town make lower contributions to mixed groups than do participants from the British India town. Moreover, we find these effects are driven by participants with strong family ties to the town.

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

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1 Introduction

A large economics literature has studied 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 tend to persist and lead to poor outcomes after colonization (Acemoglu, Johnson, and Robinson 2001; Banerjee and Iyer 2005; Banerjee, Iyer, and Samanathan 2005; Nunn 2008; Dell 2010; Iyer 2010). Indeed, legal systems imposed by colonizers are correlated with many current economic outcomes (la Porta et al. 1998; Glaeser and Shleifer 2002). 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). The latter connects to a growing literature on cultural persistence in general. Here, the overarching insight is that culture is “sticky,” and it can survive well beyond the phenomena responsible for its various attributes in the first place (Putnam 1993; Greif 1994, 2006; Voigtländer and Voth 2012; Alesina, Giuliano, and Nunn 2013; Jha 2013; Guiso et al. 2016; Becker et al. 2016; Giuliano and Nunn 2017; Gorodnichenko and Roland 2017; Greif and Tabellini 2017; Nunn and de la Sierra 2017; Karaja and Rubin 2017).

A primary challenges in this literature is that of identification: what is culture and what is some other economic, social, or political phenomenon? There are standard econometric techniques to isolate aspects of culture vis-à-vis other inputs, each with its own strengths and weaknesses. For instance, instrumental variables have been used with some success in separating causal effects from spurious correlations (Tabellini 2010; Nunn and Wantchekon 2011). Yet, beyond conventional IV complaints (Young 2017), instruments do not always shed light on the underlying channel of transmission. While this may not be an issue for studies in which the path of transmission is obvious, this is rarely the case. Another solution is using regression discontinuity (RD), assuming the discontinuity in question yields one primary channel connecting some historical event or institution to cultural differences in the present (Grosfeld et al. 2013; Becker et al. 2016; Buggle 2016). RD techniques are powerful in parsing out culture from other stimuli because they generally account for alternative hypotheses. However, the primary drawback is that discontinuities studied in the literature—often long borders—are rarely exogenous; over long stretches, borders are chosen for a reason (that may also affect the outcomes in question). This can be addressed when data on pre-trends are of high quality (e.g., Becker et al. 2016), which is often not the case due to the historical nature of the “pre-treatment” area. Finally, laboratory and field experiments help parse out differences among different populations using economic games (Fershtman and Gneezy 2001; Cassar et al. 2013; Bigoni et al. 2016; Butler et al. 2016; Lowes et al. 2017). However, with important exceptions, experiments are not always useful in determining the antecedents of differences in behavior among treated and untreated groups.

In this paper, we try to overcome these difficulties of parsing out historical causes of contemporary cultural differences, while focusing on a part of the world, India, that was subject to varying degrees of colonization. We combine a “lab in the field” experiment with a natural experiment in three small towns barely separated by an old colonial border. None of these towns were important in the colonial period, and the two towns we focus on are just barely on opposite sides of the border (17 km apart), with one in British India and the other in a Princely State (i.e., a state in which local autonomy remained with the local ruler). This methodology is similar to that employed in Robinson (2016), Lowes et al. (2017), and Karaja and Rubin (2017), who

1 However, “extractive institutions” were not present everywhere, even in erstwhile extractive colonies. See Dell and Ollken (2017) for an example of colonial provision of public goods.

2 Guiso et. al (2006), Nunn (2012), and Alesina and Giuliano (2015) offer excellent reviews of the long-run effects of culture on economic outcomes, see .
employ lab in the field experiments across plausibly exogenous borders to test the degree to which culture “sticks” despite changing economic and political circumstances.\(^3\) However, to our knowledge, our paper is the first to employ such a methodology in a colonial setting that was responsible for stark institutional and (perhaps) cultural differences when compared with nearby, non- (or weakly-)colonized regions.

The three towns in question—Kekri, Sarwar, and Shahpura—are located in the present state of Rajasthan. In the colonial period, the British annexed a small part of Rajputana (as it was known), Ajmer, which included Kekri near its border (see Figure 1). Historically, they were small towns with populations from 4,000 to 9,000. They continue to remain small today with populations ranging from 20,000 to 40,000 as of 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 lead one of the Maratha leaders to cede the territory of Ajmer province to the East India Company. The adjoining states of Kishangarh (containing Sarwar) and Shahpura entered into treaties with the British whereby the British controlled their defense and foreign policy, but the local rulers were allowed to manage their internal administration. Historical records suggest the decision to bring Ajmer under direct colonial rule was primarily the result of winning the battle and the strategic location of Ajmer city, the capital. Commercial and agricultural reasons were unimportant because this region was not agriculturally productive; it is near the Thar desert, which is arid with low and unpredictable rainfall. Kekri, our experimental town, was on the south-eastern edge of Ajmer province. By most accounts it was a small and inconsequential town that happened to come under direct colonial rule. Hence, a natural experiment arose in these towns: one was subject to colonial rule for idiosyncratic reasons for well over a century, and the other was not.

Importantly, towns in this part of British India had a different experience than those under Princely rule with respect to public goods. While all three of our experimental towns had schools, hospitals, and jails, the British Indian town (Kekri) differed from the Princely towns in two ways. First, (British) Kekri had a more modern municipal board that taxed consumption in the town to fund public services. In contrast, local governance was more centralized in (Princely) Sarwar and Shahpura, where the ruler and his advisers made important tax and spending decisions. Second, citizens of (British) Kekri were exposed to more foreigners with British officials playing a salient role in administration. Hence, people from Kekri had a longer historical experience with local governance and working with outsiders.\(^4\) We therefore hypothesize that experiment participants from (British) Kekri should be willing to give more to public goods than those from (Princely) Sarwar, the differences in public good provision should be exacerbated when “outsiders” benefit from the good, and these differences should be most apparent among participants who have family ties to the town (i.e., did not move to the town in their lifetime).

In our lab in the field experiment, subjects 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, sometimes, people from the other towns. Our findings are summarized 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. In both towns the mixed groups include two people from the home town 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

\(^3\) For more on lab in the field experiments in general, see Gneezy and Imas (2016). Another example of a methodology similar to ours is Gangadharan et al. (2017), who run lab in the field experiments in Cambodia. They show that participants who were directly affected by the Khmer Rouge genocide still exhibit more anti-social behavior in the present day.

\(^4\) For more on publicly provided goods in British India and the Princely States, see Chaudhary (2009), Chaudhary and Rubin (2011, 2016), Bogart and Chaudhary (2012), and Bharat (2012).
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. Indeed, the results confirm that the relevant difference is between British and Princely India. We find no significant differences in contributions to mixed groups between Sarwar and Shahpura.

Taken together we interpret these results as evidence of historical institutions affecting contemporary cooperation via an inter-generational (vertical) transmission mechanism. 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 border; ii) in the direction we hypothesized ex ante; and iii) confined to those whose families are from the town and are therefore presumably imbued with the culture generated generations ago.

Our design contains many of the nice features of a regression discontinuity and conventional lab in
the field experiments—a plausibly exogenous treatment combined with an incentivized test of behavior—without their drawbacks. Yet, we fully recognize that our design comes with its own drawbacks. For one, its external validity is not obvious. After all, we simply report the results of experiments in three Indian towns, which may be idiosyncratic. Yet, our results in conjunction with other studies using a similar methodology (Robinson 2016; Lowes et al. 2017; Karaja and Rubin 2017), which report similar findings, along with a large literature cited above regarding the colonial legacy and, more generally, the “stickiness” of culture, suggests that our results are at the very least consistent with the literature. Second, our experiment can be considered (very) low-N: while over 500 people participated in our games, we are primarily concerned with inter-town differences, for which \( N = 3 \). This would be an issue if this paper were the first to ever test for the causes of inter-regional cultural differences or differences between colonized and non-colonized regions, since there may be something idiosyncratic about any (or all) of these towns that drive the results. However, we again point to the consistency of our results with a broader literature, which suggests that if our results are indeed idiosyncratic, they are so in a manner that is consistent with a much larger “N”, which we believe to be unlikely. Finally, there is the issue of replicability: these results would almost surely be impossible to replicate in the three towns that we study. The reason is that, in such a small population setting, many (and perhaps most) of the participants would either have participated in our experiment or talked with someone who did. Our experiment was clearly talked about in the three towns, thus tainting the participant pool.

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 offers an informal theoretical framework, which generates predictions for the experiments. Section 4 describes the experimental design and implementation. Section 5 presents the experimental results, and Section 6 concludes.

2 Historical Background

2.1 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 2, the Princely States were scattered throughout the country with larger concentrations in western and central India.\(^5\)

We focus in this paper on the historical boundary of British and Princely India in the present day state of Rajasthan in north-western India (called Rajputana in the colonial period). We selected this region because

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\(^5\)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 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.
the historical evidence suggests that British annexation in Rajputana resulted from military conquest and not its economic characteristics, such as agricultural or commercial potential. In the colonial period, much of Rajputana was divided into numerous Princely States under the control of patrilineal clans known as Rajputs. These states had pre-colonial roots predating the arrival of Europeans. They nominally came under the control of the Mughal Empire in the 16th and 17th centuries, but Rajput rulers retained strong local autonomy by marrying their daughters to Mughal emperors (Ramusack 2004).

As the Mughal Empire declined in the 18th century, parts of Rajputana came under the control of the Marathas. Following years of payments to the Marathas and frequent attacks by Maratha-associated raiders (known as Pindaris), the Rajput states solicited military help from the English East India Company.

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6 Rajputs claim to descend from warrior Hindu castes. Scholars continue to debate their historical origins (Ramusack 2004).

7 The Maratha Empire was a Hindu Empire that rose from western India to control vast territory in the 18th century. In the early years of 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.
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. The
remaining Rajputana States surrounding Ajmer signed treaties with the Company guaranteeing their local
independence and status as Princely States.

Our experiments target three towns located along this historical border of the Ajmer province of British
India and two Princely States immediately surrounding Ajmer (Kishangarh and Shahpura). Kekri, the town
in former British India, is historically part of the Kekri sub-division in the south-eastern portion of Ajmer.
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. Figure 1 shows
a map of Rajasthan with the princely towns located in the larger (yellow) state and the British India town
(Kekri) located in the smaller (pink) 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. Both states were 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. 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.

Kishangarh 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 again as a reward to the
current ruler of Kishangarh 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.\footnote{Shahpura was considered a Chiefship Princely State, namely a lower administrative group of Princely States.}

In short, the historical boundary separating Kekri in British India from Sarwar and Shahpura in Princely
India was a result of military conquest unrelated to specific economic features of these towns. 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.

Table 1 summarizes population information on these towns from the 1931 census. All three towns were
classified as Class V municipalities with populations of 5,000 to 10,000. They also had similar proportions
of Hindus and Muslims. After Indian independence in 1947, Ajmer became a Class C state that came under
the Central Government. However, it was converted into a district of Rajasthan state in 1956 as part of
the 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. As of the 2011 census,
these are still small towns with populations ranging from 20,000 to 40,000.
### Table 1: Characteristics of Towns

<table>
<thead>
<tr>
<th></th>
<th>1931 Census of India</th>
<th>2011 Census of India</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population</td>
<td>% Hindu</td>
</tr>
<tr>
<td>Kekri British India</td>
<td>7,179</td>
<td>73.88</td>
</tr>
<tr>
<td>Sarwar Kishangarh State</td>
<td>4,000</td>
<td>71.50</td>
</tr>
<tr>
<td>Shahpura Shahpura State</td>
<td>9,298</td>
<td>77.37</td>
</tr>
</tbody>
</table>

Sources: Census of India, 1931 and 2011. SC refers to Scheduled Castes and ST refers to Scheduled Tribes.

### 2.2 Public Good Provision in Princely and British India

The small towns in which we conduct our experiment had secure property rights in the colonial period by most accounts. They also had access to similar technology. All three towns had post and telegraph offices. They were situated close to the Rajputana-Malwa railways. They had a few schools and a small police force.

Yet, there were two key differences between the towns. First, the presence and role of outsiders, particularly foreigners, was more salient in Kekri (British India) than in Sarwar or Shahpura (Princely India). Although Europeans accounted for less than 1 percent of the population in colonial India, they were disproportionately located in 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. In comparison, there was only one British subject living in the capital city of Kishangarh in Kishangarh Princely State in 1931. Our experiment towns of Sarwar and Shahpura had no British or foreign presence. Hence, the citizens of Kekri (British India) were exposed to many more foreign outsiders than the Princely towns of Sarwar and Shahpura.

Second, local government was more developed in Kekri as compared to the Princely India towns. After the Indian mutiny in 1857 and the subsequent transfer of power from the East India Company to the British Crown, the colonial government decentralized the management of roads and other public services to local bodies in British India. Urban municipal boards were established in the 1860s and 1870s in most urban towns. For example, the Kekri municipality was established in 1879. Similar to other municipal boards of British India, Kekri funded itself via an octroi tax on consumption goods brought into the town.

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9The Census of 1931 does not record the number of Europeans in the other towns of Ajmer province.
According to the Administration Report of Ajmer-Mewara for 1899-1900 (1901), octroi taxes accounted for 82 percent of municipal revenues. Rental income from lands and buildings was the other major revenue source (12 percent). 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, attended to the 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 in concert with one advisor. There is no mention of local town-specific taxes to fund local services.

Thus, Kekri (British India) was historically exposed to outsiders and experienced more developed local governance as compared to Sarwar and Shahpura (Princely India). After independence in 1947, these towns have been under the common state governance of Rajasthan. In the case of (British) Kekri and (Princely) Sarwar, they have also been under the same local governance of Ajmer district. Against this background, our goal is to test if this historical boundary has any effect on one’s willingness to contribute to joint public goods in the present.

3 Experiment Design and Implementation

3.1 Experiment Design

Our game is 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 a 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 to be split between an individual pot and a joint pot. The participant made only one decision on how much to contribute to the joint pot. Participants could contribute either 0, 50, 100, or 150 rupees to the joint pot. Participants made their contribution by circling any of the four numbers 0, 50, 100, or 150, representing their contribution as shown in Figure 3. 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.\footnote{Experiments 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).}

Figure 3: Experimental Handout

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ID# ________
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0  50  100  150
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Please circle a number above 0, 50, 100, or 150. This is the number of rupees you will place in the \textbf{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 experiment (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 repeated single-shot version of the standard linear game with different combinations.

Many studies have found that repeated public good games lead to decay in subsequent rounds with lower contributions to the joint account (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. After playing the games the subjects completed a short demographic survey.

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, two Nielsen researchers, one of this paper’s authors, and a team of experimenters carried out a pilot experiment 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 actual experiment towns.

In preparation for the experiments, the Neilsen team secured the necessary local IRB approvals and informed local officials in each town including the police commissioner about the exercise. We never discussed with the Nielsen team why these towns were selected. And as far as we know they were unaware of the
### Table 2: Treatments

<table>
<thead>
<tr>
<th>Town</th>
<th>Hist Polity</th>
<th>Order</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kekri</td>
<td>British</td>
<td>Kekri-Sarwar-Shahpura</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>Sarwar-Kekri-Shahpura</td>
<td>74</td>
</tr>
<tr>
<td>Sarwar</td>
<td>Princely</td>
<td>Sarwar-Kekri-Shahpura</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>State</td>
<td>Kekri-Sarwar-Shahpura</td>
<td>100</td>
</tr>
<tr>
<td>Shahpura</td>
<td>Princely</td>
<td>Shahpura-Kekri-Sarwar</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>State</td>
<td>Kekri-Shahpura-Sarwar</td>
<td>100</td>
</tr>
</tbody>
</table>

Notes: Home town groups consist of four players from the same town. Mixed town groups consist of two players—one self and a participant from one’s town—and two participants from 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).

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.

The Nielsen team secured similar local facilities in each town to conduct the experiments. We instructed Nielsen to recruit 200 participants 18 years or older per town. Local recruiters used the same script, informing individuals that they [Nielsen] were running an experiment on how people make decisions on behalf of researchers in India, the UK, and USA. If they agree 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. Nielsen recruited the subjects a day or two in advance of the actual experiments.

On account of the Indian setting of small towns with lower levels of schooling, the experiments were individually conducted 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. Nielsen staff returned a 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 Nielsen team paused the experiments for the day. They 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 the October 20 that influenced
the decisions of the October 20th participants. Appendix Table A1 shows the differences in contribution for each experiment between the October 6-7 and October 20 participants. It seems there was perhaps a discussion in the town of strategies to maximize individual pay-offs. If this were the case, we would expect to see the October 20th Kekri participants to contribute less in all three games. Indeed, the means in Appendix Table A1 show that the October 20 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 October 20th participants from the analysis.

4 Theory and Predictions

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 they kept what they did not contribute in their private account, i.e., $W - y_i$. Their contributions to the joint account were multiplied by a multiple $x > 1$, and the joint account was distributed evenly among the $N$ members of the group. Thus, each individual’s payoff was $P_i = \left( W - y_i \right) + \frac{x}{N} \left( y_i + \sum_{j \neq i} y_j \right)$. 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.

However, there is a large literature suggesting that people give much more than the free-riding Nash equilibrium in public goods games (Ledyard 1995; Chaudhuri 2011). There may be any number of behavioral reasons why people contribute, including altruism, anticipated reciprocity, or warm glow (Andreoni 1990).

With respect to our experiment, this entails that there may be differences in the amount contributed between towns given their different histories with respect to public good provision and interaction with outsiders.

The primary questions our experiment is structured to address are: i) whether the historical presence of institutions providing public goods still affects one’s willingness to contribute to public goods today; and ii) whether the historical presence of outsiders affects one’s willingness to contribute to public goods today when outsiders receive some of the benefit. We conjecture that both 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; Nunn 2012; Mokyr 2016; Greif and Mokyr 2016; Alston et al. 2016; Giuliano and Nunn 2017; Iyigun and Rubin 2017), 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 and Rubin 2017).11

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. Moreover, they are now part of the same administrative district, meaning that any attitudes towards public goods 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 with respect to public good provision for reasons unrelated to historical governance or the presence of outsiders. If this is true, we would also expect differences to arise in the comparison between Sarwar and Shahpura. Yet, given their similar histories of public good provision and exposure to outsiders,

11The 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.
our framework suggests that participants in Sarwar and Shahpura should act similarly in the various public goods games. Hence, in all of our predictions we predict no difference in the actions of participants from Sarwar and Shahpura.

We begin with our cleanest prediction, which relates to public good contributions when groups are “mixed” (i.e., there are two participants from one town and two from another). The history of Kekri (British India) over viewed in Section 2 suggests both a greater legacy of public good provision and more exposure to outsiders. In British India, an outside foreign government dominated day-to-day affairs such as administration and resolving disputes in local courts. This was particularly true in towns. On the other hand, rulers of Princely States, along with a few advisers, managed local governance and administration. While they may have borrowed ideas and laws from neighboring British India, the implementation was centralized under local Indian rulers and ministers. Cooperation with outsiders was not as necessary. Princely State towns also had less experience with local taxation and the local provision of public services. Urban municipal boards were more common and developed in British Indian towns. If these histories left a legacy influencing one’s (present-day) willingness to contribute to public goods, both of these features would suggest that participants from Kekri would contribute more when placed in mixed groups.

Hence, 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 Kekri and two members from 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 Sarwar and two members from Shahpura. This serves as a useful control because any idiosyncrasies in the Sarwar population regarding their attitudes toward public good provision or playing with “outsiders” that do not arise from historical circumstance would also be seen in the control comparison. Hence, we expect the following prediction to arise:

**Prediction 1** Participants from (Princely) Sarwar will contribute less when grouped with outsiders than will participants from (British) Kekri. However, participants from (Princely) Sarwar and (Princely) Shahpura will contribute the same amount when grouped with outsiders.

Predictions regarding cooperation with fellow townspeople are less clean. For both the Kekri-Sarwar treatment group and the Sarwar-Shahpura control group, the appropriate comparison is the participants’ decisions in experiment (A), in which participants were all placed in groups consisting of four people from their town. On the one hand, if the cultural attributes laid out in Prediction 1 spill over into cooperation with fellow townspeople, then we would expect contributions to be lower in Sarwar (Princely State) than in Kekri (British India). On the other hand, the fact that options with outsiders may have been more limited in the Princely States may have made cooperation with insiders all the more valuable (Greif 1994; Karaja and Rubin 2017). If the latter effect dominates the former effect, we would expect contributions to “insider” groups to be higher in Sarwar than in Kekri. Our experiment is not designed to allow us to parse out these two countervailing effects, so we cannot make a clean prediction regarding cooperation with fellow townspeople.

However, we can make a clean statement about the relative amount participants contribute when in groups comprised of fellow townspeople relative to the amount they contribute when in mixed groups. The logic above suggests that participants from Princely States may contribute less to fellow towns-persons than...
participants from British India, but this will be mitigated in part (or fully) by cooperation with insiders being more valuable. Combined with Prediction 1, this suggests that participants from Princely towns should contribute relatively more to insiders than to mixed groups. This logic is formalized as follows:

**Prediction 2** Participants from (Princely) Sarwar will contribute more when grouped with fellow townspeople relative to outsiders than will participants from (British) Kekri. However, there will be no difference in contributions between the two types of groups for participants from (Princely) Sarwar and (Princely) Shahpura.

Citizens of Kekri, Sarwar, and Shahpura have not lived under British or Princely rule for seventy years. Hence, if we find the expected differences in contributions between the three towns, the must be some cultural transmission mechanism at work. One of the most commonly accepted mechanisms in the economics literature is “vertical transmission”, as noted above, in which parents transmit their preferences to their children as a form of parental altruism. These preferences then spread through the population, and the cultural and social environment in which children live determine the probability that those traits persist in equilibrium.

While we cannot speak to this exact cultural transmission mechanism, given the simplicity of our experiment, our questionnaire does allow us to test an implication of the Bisin and Verdier (2001) model. In their model, the family plays a role in transmitting cultural values to children (as opposed to the alternative case, where there is no investment from the family and children pick up their culture from the community). In this case, people whose families have lived in the town for multiple generations are more likely to have the cultural traits predicted in Predictions 1 and 2. To test this conjecture, the survey administered after the experiment (see Appendix B.3) asked participants how long their families have lived in the town in question. The logic laid out above suggests that participants whose families have lived in the town longer should be more likely to act as predicted in Predictions 1 and 2.

**Prediction 3** If vertical cultural transmission mechanism is salient, Predictions 1 and 2 should hold more strongly for participants whose parents (and previous generations) are from the town.

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. We asked Nielsen to recruit 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 less educated than those from Sarwar (0.56 vs. 0.68, p = 0.026), and this may be a
reflection of the fact that this sample has fewer Muslims (0.03 vs. 0.34 and 0.45 for Sarwar and Shahpura) and a higher fraction of lower castes (0.55 vs. 0.20 and 0.23 for Sarwar and Shahpura).  

Table 3: Summary Statistics, Demographics

<table>
<thead>
<tr>
<th>Town</th>
<th>Female</th>
<th>Age Under 25</th>
<th>Married</th>
<th>Less Than High School</th>
<th>Muslim</th>
<th>SC/ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kekri (British)</td>
<td>0.46</td>
<td>0.34</td>
<td>0.68</td>
<td>0.56</td>
<td>0.03</td>
<td>0.55</td>
</tr>
<tr>
<td>N = 154</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.01)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Sarwar (Princely)</td>
<td>0.41</td>
<td>0.30</td>
<td>0.70</td>
<td>0.68</td>
<td>0.34</td>
<td>0.20</td>
</tr>
<tr>
<td>N = 200</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Shahpura (Princely)</td>
<td>0.39</td>
<td>0.53</td>
<td>0.69</td>
<td>0.57</td>
<td>0.45</td>
<td>0.23</td>
</tr>
<tr>
<td>N = 200</td>
<td>(0.03)</td>
<td>(0.04)</td>
<td>(0.03)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.03)</td>
</tr>
</tbody>
</table>

p-values: Difference in Means

| 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; p-values from Mann-Whitney-Wilcoxon test. 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. More importantly, as noted in Table 1, the actual populations of these three towns are similar across all demographic lines. 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 present tables where we restrict the analysis to non-Muslims and non-SC/ST (see Appendix A for results). Our results largely the same in these split-samples.

One of the primary problems 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 public goods. 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. The occupational summary statistics 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.

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

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13We also asked numerous questions about participants’ financial history (i.e., borrowing and lending). The averages are reported in Appendix Table A2. There are few statistically significant differences across towns in any of the participants’ personal finance characteristics.

14We 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.
Table 4: Summary Statistics: Occupations

<table>
<thead>
<tr>
<th>Town</th>
<th>Self-Employed</th>
<th>Family Worker</th>
<th>Regular Wage</th>
<th>Casual Laborer</th>
<th>Student</th>
<th>Employer</th>
<th>Seeking Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kekri (British)</td>
<td>0.31</td>
<td>0.29</td>
<td>0.16</td>
<td>0.09</td>
<td>0.11</td>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>N = 154</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.03)</td>
<td>(0.01)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Sarwar (Princely)</td>
<td>0.38</td>
<td>0.29</td>
<td>0.14</td>
<td>0.07</td>
<td>0.07</td>
<td>0.01</td>
<td>0.03</td>
</tr>
<tr>
<td>N = 200</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Shahpura (Princely)</td>
<td>0.28</td>
<td>0.23</td>
<td>0.15</td>
<td>0.13</td>
<td>0.16</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>N = 200</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.03)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
</tbody>
</table>

p-values: Difference in Means

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kekri vs. Sarwar</td>
<td>0.143</td>
<td>0.964</td>
<td>0.580</td>
<td>0.589</td>
<td>0.129</td>
<td>0.454</td>
<td>0.454</td>
</tr>
<tr>
<td>Kekri vs. Shahpura</td>
<td>0.605</td>
<td>0.224</td>
<td>0.880</td>
<td>0.311</td>
<td>0.181</td>
<td>0.182</td>
<td>0.454</td>
</tr>
<tr>
<td>Sarwar vs. Shahpura</td>
<td>0.034</td>
<td>0.212</td>
<td>0.668</td>
<td>0.096</td>
<td>0.003</td>
<td>0.476</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Notes: Standard errors of mean in parentheses; p-values from Mann-Whitney-Wilcoxon test.

“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. 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 not surprising 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). Although if our hypothesis is correct these responses are endogenous to the event under study, 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, these differences are not statistically different.

5.2 Group Contributions in the Treatment and Control Groups

We now turn to the primary data analysis. The predictions laid out in Section 4 indicate that participants from (British) Kekri should be more willing to contribute to mixed groups (i.e., with “outsiders”) than those from (Princely) Sarwar, while we should see no differences in contributions to mixed groups between participants from (Princely) Sarwar and (Princely) Shahpura. We test these predictions by first analyzing the mean amount sent among different groups in the different towns, and then we run regressions controlling for important covariates.

We begin by showing histograms of the joint contribution for the different experiments. Figure 4 shows the distribution of joint contributions to the outsider and insider 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
Table 5: Summary Statistics: Life History, Local Knowledge, and Trust

<table>
<thead>
<tr>
<th>Town</th>
<th>Parents from Town</th>
<th>Lived in Town Entire Life</th>
<th>Know Outsider</th>
<th>Trust Co-townspeople (1-5)</th>
<th>Trust Outsiders (1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kekri (British)</td>
<td>0.80 (0.03)</td>
<td>0.76 (0.03)</td>
<td>0.54 (0.04)</td>
<td>4.14 (0.09)</td>
<td>3.42 (0.08)</td>
</tr>
<tr>
<td>N = 154</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarwar (Princely)</td>
<td>0.74 (0.03)</td>
<td>0.77 (0.03)</td>
<td>0.61 (0.03)</td>
<td>4.05 (0.07)</td>
<td>3.52 (0.07)</td>
</tr>
<tr>
<td>N = 200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>p-values: Difference in Means</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.189</td>
<td>0.908</td>
<td>0.151</td>
<td>0.153</td>
<td>0.377</td>
</tr>
</tbody>
</table>

|                       |   Control Group   |                           |               |                           |                       |
| Sarwar (Princely)     | 0.74 (0.03)       | 0.77 (0.03)               | 0.31 (0.03)   | 4.05 (0.07)               | 3.21 (0.07)           |
| N = 200               |                   |                           |               |                           |                       |
| Shahpura (Princely)   | 0.80 (0.03)       | 0.83 (0.03)               | 0.35 (0.03)   | 3.90 (0.09)               | 3.11 (0.06)           |
| N = 200               |                   |                           |               | p-values: Difference in Means |                       |
|                       | 0.181             | 0.106                     | 0.400         | 0.574                     | 0.366                 |

Notes: Standard errors of mean in parentheses; p-values from Mann-Whitney-Wilcoxon test. 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.

from their own town and two members from the other town. Hence, both Kekri and Sarwar’s outsider group includes two people from Kekri and two from Sarwar. This corresponds to experiment (B). In the histograms, experiment (B) is referred to as the mixed town group.

As seen in the first column of Figure 4, participants from 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 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, 48 percent of Sarwar subjects contributed 50 rupees and another 3 percent chose the free-riding contribution of 0 rupees when matched in outsider groups with people from Kekri. Subjects in Sarwar, a town in former Princely India, thus appear to be less cooperative in mixed town outsider groups than subjects in Kekri, a town in former British India.

The second column of Figure 4 shows participants’ joint contribution in groups comprised solely of cotownspeople, i.e., experiment (A). One pattern immediately jumps out: participants in both towns contribute significantly more to their insider group than outsider group. In laboratory settings in the United States, 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 (Fershtman and Gneezy 2001; Balliet, Wu, and De Dreu 2014; Karaja and Rubin 2017). Although our insider and outsider group can be viewed as a partner and stranger style experiment, there is a key difference. 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. Against this backdrop, it is perhaps unsurprising that Indian subjects are more cooperative with insiders.
Compared to the outsider group contributions, the difference between Kekri and Sarwar in the insider group is less striking. In both towns, almost fifty percent of subjects contribute 100 rupees. An additional 19 percent give the Pareto-efficient contribution of 150 rupees in Sarwar compared to 29 percent in Kekri. This would suggest subjects in Kekri are more cooperative even in insider groups compared to 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 2008). These studies find contributions ranging 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.
In Figure 5 we show the same 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 their experiment (C). As seen in the first column, the distribution of joint contributions to the outsider group are remarkably similar for Sarwar and Shahpura. We do not observe the difference seen in Figure 4 between Kekri and Sarwar. As described in the theory section, experiment (C) in Sarwar and Shahpura offers another test of our hypotheses. If we are observing differences in cooperative behavior 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 5 support this hypothesis.

Table 6 and Figure 6 summarize the contributions to the joint account in the three towns, broadly confirming the patterns seen in the histograms. In the top panel of Table 6, we see that participants from (British) Kekri contribute more to both their co-townspeople as well as the mixed group relative to participants from (Princely) Sarwar ($p = 0.073$ and $0.074$). Meanwhile, none of the “control” comparisons between Sarwar and Shahpura are statistically significant. This is consistent with Prediction 1, which suggests that participants from the old British town (Kekri) should give more to the public good when matched with outsiders. However, it does not support Prediction 2, which suggests that participants should send more to their co-townspeople in Sarwar than in Kekri.\textsuperscript{15}

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.\textsuperscript{16} This allows us to address Prediction 3, which states that the predictions should 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 informal and formal 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, $p = 0.528$). While there is some evidence that participants from (Princely) Sarwar were more likely to give more when grouped with co-townspeople relative to outsiders (0.36 vs. 0.44, $p = 0.222$), the difference is statistically insignificant. In all cases in the control groups, the differences between contributions from participants from (Princely) Sarwar and (Princely) Shahpura are statistically indistinguishable. These findings are summarized as follows.

**Result 1** Participants from Kekri (British India) gave more when grouped with outsiders than did those from Sarwar (Princely State). This result was driven primarily by participants whose parents are from the town in question. There were no differences in out-group giving within the control comparison (Sarwar vs. Shahpura).

**Result 2** Participants from Sarwar (Princely State) whose parents are from the town are more likely to give more to co-townspeople than to mixed groups compared to participants from Kekri (British India), although the inter-town difference is not statistically significant. There are no differences in in-group/out-group giving within the control comparison (Sarwar vs. Shahpura).

\textsuperscript{15}In Appendix Tables A3 and A4, 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.

\textsuperscript{16}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.
These results are simply comparisons of means. Yet, since our setting is a “lab in the field” experiment, we collected demographic information on participants including gender, age, education, marital status, religion, caste, and strength of familial ties to the town.

Since town specific demographics could be correlated with individual decision-making, we also present results using ordered probit regressions. 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 for the ordered probit regressions. In 7, we show the results for the treatment group (Kekri and Sarwar) in columns (1)-(3) and the control group (Sarwar and Shahpura) in columns (4)-(6). In the treatment group, we
Table 6: Contributions to Joint Account

<table>
<thead>
<tr>
<th></th>
<th>British India</th>
<th>Princely State</th>
<th>Princely State</th>
<th>Princely State</th>
<th>All Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kekri Sarwar</td>
<td>p-value</td>
<td>Sarwar</td>
<td>Shahpura</td>
<td>p-value</td>
</tr>
<tr>
<td><strong>Contribution to Mixed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (Outsiders)</td>
<td>84.7 78.3</td>
<td>0.074</td>
<td>76.3</td>
<td>78.0</td>
<td>0.591</td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>56%</td>
<td>52%</td>
<td>51%</td>
<td>52%</td>
<td></td>
</tr>
<tr>
<td><strong>Contribution to Home</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (Insiders)</td>
<td>100.7 93.0</td>
<td>0.073</td>
<td>93.0</td>
<td>96.5</td>
<td>0.349</td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>67%</td>
<td>62%</td>
<td>62%</td>
<td>64%</td>
<td></td>
</tr>
<tr>
<td>More to Home (0/1)</td>
<td>0.40 0.41</td>
<td>0.720</td>
<td>0.41</td>
<td>0.40</td>
<td>0.760</td>
</tr>
<tr>
<td>(0.04)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>154 200</td>
<td>200</td>
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<td></td>
</tr>
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</table>

Parents are from Town

<table>
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<th>Princely State</th>
<th>Princely State</th>
<th>Princely State</th>
<th>All Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kekri Sarwar</td>
<td>p-value</td>
<td>Sarwar</td>
<td>Shahpura</td>
<td>p-value</td>
</tr>
<tr>
<td><strong>Contribution to Mixed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (Outsiders)</td>
<td>85.8 77.3</td>
<td>0.055</td>
<td>76.3</td>
<td>78.7</td>
<td>0.530</td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>57%</td>
<td>52%</td>
<td>51%</td>
<td>52%</td>
<td></td>
</tr>
<tr>
<td><strong>Contribution to Home</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (Insiders)</td>
<td>96.9 93.5</td>
<td>0.528</td>
<td>93.5</td>
<td>94.9</td>
<td>0.733</td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>65%</td>
<td>62%</td>
<td>62%</td>
<td>63%</td>
<td></td>
</tr>
<tr>
<td>More to Home (0/1)</td>
<td>0.36 0.44</td>
<td>0.222</td>
<td>0.42</td>
<td>0.36</td>
<td>0.281</td>
</tr>
<tr>
<td>(0.05)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>113 139</td>
<td>139</td>
<td>157</td>
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<td></td>
</tr>
</tbody>
</table>

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.

focus on the outsider mixed group experiment (B) in the top panel, while in the control group, we focus on the outsider mixed group experiment (C) in the top panel. In both groups, we focus on the co-townspeople group experiment (A) in the bottom panel. All the regressions include an indicator if the insider group experiment (A) was played second. We cluster the standard errors by town and experiment order.17

In specification (1), we do not include any demographic controls. Here, the coefficient on the Sarwar dummy shows that individuals are less likely to contribute 100 and 150 rupees compared to individuals in Kekri. In terms of marginal effects, the probability of Sarwar participants contributing 100 rupees is 5.4 percentage points less than Kekri participants. In these calculations the other independent variables are held at their mean values. We find a similar negative effect of 5 percentage points for 150 rupees. In contrast, the probability of Sarwar participants contributing 50 rupees is 10 percentage points higher than

17 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 A5. The results are similar to those reported in Table 7.
for Kekri participants. When we include the demographic controls in specification (2), the coefficient on Sarwar increases. Now, the probability of participants in Sarwar contributing 100 rupees is 8 percentage points lower than Kekri, while the probability of contributing 0 or 50 rupees is 15 percentage points higher.

Specification (3) presents the results confining the universe of observations only to those whose parents are from the town. The coefficient on the Sarwar dummy is larger in magnitude and highly significant in the mixed town group, but it is small and statistically insignificant for the co-townspeople group.

In specifications (4)-(6), we run similar regressions for the control group (Sarwar vs. Shahpura), using experiment (C) for the mixed town group and experiment (A) for the co-townspeople group. As suggested by Prediction 1, there are no statistically significant differences between towns in either the mixed town group or the co-townspeople group once we include covariates. In 8 we confirm the patterns observed in 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 town. Indeed, participants with strong ties to the town make lower contributions to mixed town outsider groups in (Princely) Sarwar compared to (British) Kekri. And, 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, and they also provide support for the predictions laid out in Section 4.

6 Conclusion

This paper exploits a natural experiment of a historical boundary to study whether norms derived from historical institutional 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 and 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
Table 7: Ordered Probit Regressions, Contribution to Mixed Town and Co-townspeople Group

<table>
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<tr>
<th></th>
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<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
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<tr>
<td></td>
<td>All</td>
<td>All</td>
<td>Parents</td>
<td>All</td>
<td>All</td>
<td>Parents</td>
</tr>
<tr>
<td>Participants</td>
<td>Participants from Town</td>
<td>Participants from Town</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependent Variable: Contribution to Mixed Town Group</td>
<td>Treatment Group (Kekri vs Sarwar)</td>
<td>Control Group (Sarwar vs Shahpura)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarwar Dummy</td>
<td>-0.264*** (0.052)</td>
<td>-0.409*** (0.082)</td>
<td>-0.599*** (0.135)</td>
<td>-0.099 (0.077)</td>
<td>-0.082 (0.089)</td>
<td>-0.057 (0.169)</td>
</tr>
<tr>
<td>Order</td>
<td>0.099 (0.060)</td>
<td>0.089 (0.065)</td>
<td>0.196* (0.102)</td>
<td>0.186** (0.080)</td>
<td>0.178** (0.077)</td>
<td>0.206 (0.142)</td>
</tr>
<tr>
<td>N</td>
<td>354</td>
<td>354</td>
<td>252</td>
<td>400</td>
<td>400</td>
<td>296</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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<tr>
<td></td>
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<td>Sarwar Dummy</td>
<td>Order</td>
<td>Sarwar Dummy</td>
<td>Order</td>
<td>Order</td>
</tr>
<tr>
<td>Dependent Variable: Contribution to Co-Townspeople Group</td>
<td>Treatment Group (Kekri vs Sarwar)</td>
<td>Control Group (Sarwar vs Shahpura)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarwar Dummy</td>
<td>-0.213*** (0.015)</td>
<td>-0.178** (0.085)</td>
<td>-0.017 (0.130)</td>
<td>-0.114*** (0.024)</td>
<td>-0.057 (0.045)</td>
<td>0.086 (0.078)</td>
</tr>
<tr>
<td>Order</td>
<td>0.097*** (0.010)</td>
<td>0.070*** (0.015)</td>
<td>0.020 (0.030)</td>
<td>0.039 (0.024)</td>
<td>0.035 (0.026)</td>
<td>0.079** (0.032)</td>
</tr>
<tr>
<td>N</td>
<td>354</td>
<td>354</td>
<td>252</td>
<td>400</td>
<td>400</td>
<td>296</td>
</tr>
</tbody>
</table>

DEMOGRAPHIC | NO | YES | YES | NO | YES | YES |

Notes: Ordered probit coefficients. Standard errors clustered by town*experiment order in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Order is an indicator if the home town group experiment was played second. Demographic controls include indicators for female, age 15-25, married, less than upper secondary education, Muslim, and scheduled caste/scheduled tribe.
Table 8: Ordered Probit Regressions, Contribution to Mixed Town and Co-townspeople Group

<table>
<thead>
<tr>
<th>(1)</th>
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<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Grandparents Lived Entire Participants from Town Life in Town</td>
<td>Treatment Group (Kekri vs Sarwar)</td>
<td>Control Group (Sarwar vs Shahpura)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarwar Dummy</td>
<td>-0.409***</td>
<td>-0.483**</td>
<td>-0.516***</td>
<td>-0.082</td>
<td>0.008</td>
</tr>
<tr>
<td>(0.082)</td>
<td>(0.191)</td>
<td>(0.085)</td>
<td>(0.089)</td>
<td>(0.194)</td>
<td>(0.113)</td>
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<tr>
<td>Order</td>
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<td>-0.107</td>
<td>0.187***</td>
<td>0.178**</td>
<td>0.053</td>
</tr>
<tr>
<td>(0.065)</td>
<td>(0.110)</td>
<td>(0.032)</td>
<td>(0.077)</td>
<td>(0.174)</td>
<td>(0.133)</td>
</tr>
<tr>
<td>N</td>
<td>354</td>
<td>191</td>
<td>270</td>
<td>400</td>
<td>227</td>
</tr>
</tbody>
</table>

Dependent Variable: Contribution to Mixed Town Group

| Sarwar Dummy | 0.178** | 0.288** | -0.057 | -0.057 | 0.176*** | 0.043 |
| (0.085) | (0.133) | (0.139) | (0.045) | (0.068) | (0.040) |
| Order | 0.070*** | 0.104 | 0.071* | 0.035 | 0.111*** | 0.039** |
| (0.015) | (0.070) | (0.041) | (0.026) | (0.021) | (0.018) |
| N | 354 | 354 | 252 | 400 | 400 | 296 |

Dependent Variable: Contribution to Co-Townspeople Group

| DEMOGRAPHIC | YES | YES | YES | YES | YES | YES |

Notes: Ordered probit coefficients. Standard errors clustered by town*experiment order in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Order is an indicator if the home town group experiment was played second. Demographic controls include indicators for female, age 15-25, married, less than upper secondary education, Muslim, and scheduled caste/scheduled tribe.
persistence of norms derived in the colonial period. In the towns under study, the British began providing local public goods earlier than neighboring rulers. We therefore hypothesize that individuals living under British rule may have had a more positive view of contributing to public goods, especially when outsiders benefit. Our experiment is designed to test whether these cultural attributes persisted until the present day.

Our experiment reveals that participants from the Princely India side of the border do indeed contribute lower amounts to public goods when grouped with outsiders compared to participants from the British India side. When we split the participants by their family ties to the towns, we find our results are driven by participants whose parents are from these towns. This suggests a vertical, inter-generational cultural transmission mechanism exists to some degree. Older generations of townspeople were exposed to more developed systems of public taxation and the presence of outsiders in British India, and they have passed these values to their children and grandchildren.

These results clearly permit alternative hypotheses. For one, the experiment essentially has $N = 3$; 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, our ex ante hypotheses were confirmed by the data; even those with respect to the effects being stronger for participants whose families are from the town. 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., Iyer 2010; Nunn and Wantchekon 2011). This paper provides more evidence in this direction, while employing a novel 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 (Greif 2006; Giuliano and Nunn 2017; Iyigun and Rubin 2017; Bisin and Verdier 2017), 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.
References


House of Commons. 1913. Statement exhibiting the moral and material progress and condition of India, for 1911-12 and the nine preceding years, being the fifth decennial report (East India: Progress and condition). London: His Majestys Stationery Office.


## Appendix: Robustness Checks

Table A1: Differences Between Kekri Participants, Oct 6-7 and Oct 20

<table>
<thead>
<tr>
<th></th>
<th>Oct 6-7 Round</th>
<th>Oct 20 Round</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution to Mixed Town Group (Sarwar)</td>
<td>84.74</td>
<td>58.70</td>
<td>0.000</td>
</tr>
<tr>
<td>Contribution to Mixed Town Group (Shahpura)</td>
<td>81.49</td>
<td>52.17</td>
<td>0.000</td>
</tr>
<tr>
<td>Contribution to Co-Townspeople Group</td>
<td>100.65</td>
<td>86.96</td>
<td>0.029</td>
</tr>
<tr>
<td>Female</td>
<td>0.46</td>
<td>0.35</td>
<td>0.175</td>
</tr>
<tr>
<td>Age Under 25</td>
<td>0.34</td>
<td>0.3</td>
<td>0.617</td>
</tr>
<tr>
<td>Married</td>
<td>0.68</td>
<td>0.8</td>
<td>0.109</td>
</tr>
<tr>
<td>Less Than High School</td>
<td>0.56</td>
<td>0.59</td>
<td>0.792</td>
</tr>
<tr>
<td>Muslim</td>
<td>0.03</td>
<td>0.07</td>
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<tr>
<td>SC/ST</td>
<td>0.55</td>
<td>0.57</td>
<td>0.814</td>
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<td>Self-Employed</td>
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<td>0.000</td>
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<td>Unpaid Family Worker</td>
<td>0.29</td>
<td>0.04</td>
<td>0.001</td>
</tr>
<tr>
<td>Regular Wage Worker</td>
<td>0.16</td>
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<td>0.427</td>
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<td>Casual Wage Laborer</td>
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<td>0.034</td>
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<tr>
<td>Student</td>
<td>0.11</td>
<td>0.09</td>
<td>0.650</td>
</tr>
<tr>
<td>Employer</td>
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<td>0.585</td>
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<td>Seeking Work</td>
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<tr>
<td>Parents from Village</td>
<td>0.8</td>
<td>0.87</td>
<td>0.299</td>
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<td>Lived in Village Entire Life</td>
<td>0.76</td>
<td>0.85</td>
<td>0.207</td>
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<tr>
<td>Know Someone from Other Town</td>
<td>0.54</td>
<td>0.3</td>
<td>0.005</td>
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<tr>
<td>Trust Co-townspeople (1-5)</td>
<td>4.14</td>
<td>3.89</td>
<td>0.006</td>
</tr>
<tr>
<td>Trust Outsiders (1-5)</td>
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<tr>
<td>Observations</td>
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Notes: p-values from Mann-Whitney-Wilcoxon test.
Table A2: Summary Statistics, Personal Finance

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<th>Town</th>
<th>Bank Account</th>
<th>Borrowed from Co-Townsperson</th>
<th>Lent to Co-Townsperson</th>
<th>Borrowed from Outsider</th>
<th>Lent to Outsider</th>
<th>Use Microfinance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kekri (British)</td>
<td>0.63</td>
<td>(0.04)</td>
<td>0.23</td>
<td>(0.03)</td>
<td>0.11</td>
<td>0.14</td>
</tr>
<tr>
<td>N = 154</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Sarwar (Princely)</td>
<td>0.73</td>
<td>(0.03)</td>
<td>0.26</td>
<td>(0.03)</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>N = 200</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Shahpura (Princely)</td>
<td>0.70</td>
<td>(0.03)</td>
<td>0.23</td>
<td>(0.03)</td>
<td>0.07</td>
<td>0.11</td>
</tr>
<tr>
<td>N = 200</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
</tbody>
</table>

$p$-values: Difference in Means

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kekri vs. Sarwar</td>
<td>0.044</td>
<td>0.387</td>
<td>0.479</td>
<td>0.871</td>
<td>0.354</td>
<td>0.068</td>
</tr>
<tr>
<td>Kekri vs. Shahpura</td>
<td>0.165</td>
<td>0.236</td>
<td>0.952</td>
<td>0.183</td>
<td>0.354</td>
<td>0.777</td>
</tr>
<tr>
<td>Sarwar vs. Shahpura</td>
<td>0.507</td>
<td>0.729</td>
<td>0.486</td>
<td>0.216</td>
<td>1.000</td>
<td>0.023</td>
</tr>
</tbody>
</table>

Notes: Standard errors of mean in parentheses; $p$-values from Mann-Whitney-Wilcoxon test; * $p < 0.05$; ** $p < 0.01$. 
### Table A3: Contributions to Joint Account, Non-Muslims

<table>
<thead>
<tr>
<th>British India</th>
<th>Princely State</th>
<th>Princely State</th>
<th>Princely State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution to Mixed Group (Outsiders)</td>
<td>84.6 (3.30)</td>
<td>78.0 (3.10)</td>
<td>0.121 (3.02)</td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>56%</td>
<td>52%</td>
<td>50%</td>
</tr>
<tr>
<td>Contribution to Insider Group</td>
<td>101.3 (3.08)</td>
<td>93.6 (3.24)</td>
<td>0.101 (3.24)</td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>68%</td>
<td>62%</td>
<td>62%</td>
</tr>
<tr>
<td>More to Home (0/1)</td>
<td>0.40 (0.04)</td>
<td>0.42 (0.04)</td>
<td>0.812 (0.04)</td>
</tr>
<tr>
<td>Observations</td>
<td>149</td>
<td>132</td>
<td>132</td>
</tr>
</tbody>
</table>

**Parents are from Town**

| Contribution to Mixed Group (Outsiders) | 85.7 (4.00) | 76.1 (3.44) | 0.066 (3.37) | 73.3 (3.44) | 78.4 (4.40) | 0.340 (4.24) |
| As % of Endowment | 57% | 51% | 49% | 52% |
| Contribution to Insider Group | 97.7 (3.44) | 95.6 (3.84) | 0.729 (3.84) | 95.6 (3.84) | 95.3 (4.24) | 0.921 (4.24) |
| As % of Endowment | 65% | 64% | 64% | 64% |
| More to Home (0/1) | 0.37 (0.05) | 0.47 (0.05) | 0.172 (0.05) | 0.50 (0.05) | 0.36 (0.05) | 0.051 (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>
<thead>
<tr>
<th></th>
<th>British India</th>
<th>Principally State</th>
<th>Kekri</th>
<th>Sarwar</th>
<th>p-value</th>
<th>Principally State</th>
<th>Sarwar</th>
<th>Shahpura</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution to Mixed Group (Outsiders)</td>
<td>92.9</td>
<td>78.9</td>
<td>0.012</td>
<td>77.4</td>
<td>75.2</td>
<td>0.605</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>62%</td>
<td>53%</td>
<td>52%</td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contribution to Insider Group</td>
<td>102.1</td>
<td>94.0</td>
<td>0.144</td>
<td>94.0</td>
<td>95.4</td>
<td>0.746</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>68%</td>
<td>63%</td>
<td>63%</td>
<td>64%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More to Home (0/1)</td>
<td>0.31</td>
<td>0.41</td>
<td>0.176</td>
<td>0.41</td>
<td>0.42</td>
<td>0.865</td>
<td></td>
<td></td>
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<tr>
<td>Observations</td>
<td>70</td>
<td>159</td>
<td>159</td>
<td>153</td>
<td></td>
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</table>

Parents are from Town

<table>
<thead>
<tr>
<th></th>
<th>British India</th>
<th>Principally State</th>
<th>Kekri</th>
<th>Sarwar</th>
<th>p-value</th>
<th>Principally State</th>
<th>Sarwar</th>
<th>Shahpura</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution to Mixed Group (Outsiders)</td>
<td>98.0</td>
<td>78.1</td>
<td>0.003</td>
<td>76.8</td>
<td>74.8</td>
<td>0.700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>65%</td>
<td>52%</td>
<td>51%</td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contribution to Insider Group</td>
<td>99.0</td>
<td>95.1</td>
<td>0.557</td>
<td>95.1</td>
<td>93.2</td>
<td>0.700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As % of Endowment</td>
<td>66%</td>
<td>63%</td>
<td>63%</td>
<td>62%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More to Home (0/1)</td>
<td>0.27</td>
<td>0.44</td>
<td>0.039</td>
<td>0.43</td>
<td>0.38</td>
<td>0.499</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>49</td>
<td>112</td>
<td>112</td>
<td>117</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

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 A5: Ordered Probit, Kekri versus Sarwar, Non-Muslims, Non-SC/ST

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
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<tr>
<td>All</td>
<td>All</td>
<td>Parents</td>
<td>All</td>
<td>All</td>
<td>Parents</td>
</tr>
<tr>
<td>Participants</td>
<td>Participants</td>
<td>from Town</td>
<td>Participants</td>
<td>Participants</td>
<td>from Town</td>
</tr>
</tbody>
</table>

**Dep Variable: Contribution to Mixed Town Group, Kekri vs. Sarwar**

<table>
<thead>
<tr>
<th>Sarwar Dummy</th>
<th>-0.260***</th>
<th>-0.424***</th>
<th>-0.630***</th>
<th>-0.446***</th>
<th>-0.514***</th>
<th>-0.732***</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(0.011)</td>
<td>(0.064)</td>
<td>(0.148)</td>
<td>(0.071)</td>
<td>(0.096)</td>
<td>(0.178)</td>
</tr>
<tr>
<td>Order</td>
<td>0.202***</td>
<td>0.189***</td>
<td>0.278***</td>
<td>0.135**</td>
<td>0.178*</td>
<td>0.275</td>
</tr>
<tr>
<td></td>
<td>(0.009)</td>
<td>(0.012)</td>
<td>(0.054)</td>
<td>(0.061)</td>
<td>(0.095)</td>
<td>(0.177)</td>
</tr>
<tr>
<td>N</td>
<td>354</td>
<td>354</td>
<td>252</td>
<td>400</td>
<td>400</td>
<td>296</td>
</tr>
</tbody>
</table>

**Dep Variable: Contribution to Co-Townsperson Group, Kekri vs. Sarwar**

<table>
<thead>
<tr>
<th>Sarwar Dummy</th>
<th>-0.213***</th>
<th>-0.234***</th>
<th>-0.076</th>
<th>-0.047</th>
<th>0.008</th>
<th>0.191***</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.072)</td>
<td>(0.120)</td>
<td>(0.092)</td>
<td>(0.104)</td>
<td>(0.059)</td>
</tr>
<tr>
<td>Order</td>
<td>0.075***</td>
<td>0.030</td>
<td>-0.074</td>
<td>0.063</td>
<td>0.065</td>
<td>0.100</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.026)</td>
<td>(0.056)</td>
<td>(0.093)</td>
<td>(0.090)</td>
<td>(0.065)</td>
</tr>
<tr>
<td>N</td>
<td>354</td>
<td>354</td>
<td>252</td>
<td>400</td>
<td>400</td>
<td>296</td>
</tr>
</tbody>
</table>

**DEMOGRAPHIC**

| NO | YES | YES | NO | YES | YES |

Notes: Ordered probit coefficients. Standard errors clustered by town*experiment order in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Order is an indicator if the home town group experiment was played second. Demographic controls include indicators for female, age 15-25, married, less than upper secondary education, Muslim, and scheduled caste/scheduled tribe.
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** = 

\[ \frac{1}{2} \times \text{total rupees put into the joint pot by you and all of your group members} \]

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**

\[ = \frac{1}{2} \times \text{(total contributions from all group members to the joint pot)} \]  

+  

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

**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 \((0+150+150+150) = 450 \text{ rupees}\). All group members will therefore earn their equal share of half the total joint pot contribution, which is \(\frac{1}{2} \times 450 = 225 \text{ rupees}\). Since you did not contribute anything to the joint pot and kept 150 rupees for your personal pot, your total income is \(150 + 225 = 375 \text{ rupees}\).
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 $\frac{1}{2} \times 150 = 75$ 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
   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

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
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.
The joint pot amount gets doubled
The doubled amount is equally distributed between the four members
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.