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# 17-08 The Cultural Transmission of Trust Norms: Evidence from a Lab in the Field on a Natural Experiment

## **Comments**

Working Paper 17-08

# The Cultural Transmission of Trust Norms: Evidence from a Lab in the Field on a Natural Experiment\*

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## Abstract

We conduct trust games in three villages in a northeastern Romanian commune. From 1775-1919, these villages were arbitrarily assigned to opposite sides of the Habsburg and Ottoman/Russian border despite being located seven kilometers apart. Russian and Ottoman fiscal institutions were more rapacious than Habsburg institutions, which may have eroded trust of outsiders (relative to co-villagers). Our design permits us to rigorously test this conjecture, and more generally, whether historically institutionalized cultural norms are transmitted intergenerationally. We find that participants on the Ottoman/Russian side are indeed less likely to trust outsiders but more likely to trust co-villagers.

**Keywords:** trust, trust game, culture, cultural transmission, natural experiment, field experiment, laboratory experiment, norms, Romania, Austria, Ottoman Empire, Habsburg Empire

**JEL codes:** C91, C93, N33, O17, Z1

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# 1 Introduction

Although it may seem obvious to a casual observer that "culture matters" for economic decision-making, it is not so obvious how it matters. How do we distinguish between cultural stimuli and economic or institutional stimuli? To what degree do these stimuli feed into each other? Indeed, how do we even begin to quantify culture? The difficulty in providing satisfactory answers to these questions long dissuaded economists from investigating the connection between culture and economic outcomes, eschewing it as either untestable or unimportant. However, culture has received a much revived interest from economists in the last two decades. Most empirical work seeking a better understanding of the consequences of culture on economic outcomes has focused on the economic and institutional roots of cultural attributes and their persistence over time in spite of changing economic conditions.<sup>1</sup> Following from important works such as Putnam (1993), who shows how medieval differences in social capital between northern and southern Italy affected institutional changes in the 20th century,<sup>2</sup> and Greif (1994, 2006) who shows how cultural distinctions directly influenced the distinct types of economic institutions of the (individualistic) Italian city-states and the (collectivist) Maghribi traders, the recent literature seeks historical channels through which distinct cultural attributes formed and still affect decision-making in the present.<sup>3</sup>

Within this literature, the cultural causes and consequences of *trust* have received special attention. There are many reasons to focus on trust: there are numerous measures of trust collected in survey data (Fisman and Khanna 1999; Zak and Knack 2001; Alesina and La Ferrara 2002; Aghion et al. 2010; Durante 2010; Nunn and Wantchekon 2011; Grosfeld et al. 2013; Karaja 2013; Becker et al. 2016); "trust" experiments are among the most widely used in experimental economics, both in the lab and in the field (Berg et al. 1995; Glaeser et al. 2000; Fershtman and Gneezy 2001; Fehr et al. 2002; Barr 2003; Karlan 2005; Sutter and Kocher 2007; Sapienza et al. 2013); and there is much evidence that trust plays a significant role in economic development (Arrow 1972; Tabellini 2010; Algan and Cahuc 2010, 2013; Butler et al. 2016).<sup>4</sup> The most difficult issue the literature faces is one of identification: how do we know when a determinant is "culture" and when it is some (potentially unobservable or institutional) variable related to culture? Convincing identification strategies used to separate cultural determinants from other economic, political, sociological, or institutional determinants have included instrumental variables (Tabellini 2010; Nunn and Wantchekon 2011), regression discontinuity (Grosfeld et al. 2013; Grosfeld and Zhuravskaya 2013; Karaja 2013; Becker et al. 2016; Buggle 2016), and laboratory or field experiments (Fershtman and Gneezy 2001; Cassar et al. 2013; Bigoni et al. 2016; Butler et al. 2016; Lowes et al. 2017).<sup>5</sup>

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<sup>1</sup>For excellent overviews of recent developments in the culture and institutions literature, see Guiso et al. (2006), Nunn (2012), and Alesina and Giuliano (2015). For important overviews of recent works on the cultural transmission of traits and its effect on long run economic development, see Spolaore and Wacziarg (2013) and Gershman (2016). Of particular relevance to the current paper is Algan and Cahuc (2013), who provide a nice review of the literature on trust and economic outcomes.

<sup>2</sup>Guiso et al. (2016) subject Putnam's hypothesis to a rigorous empirical test, showing that differences in medieval institutions and the resulting social capital differences had an impact in northern Italy but not in southern Italy. Bigoni et al. (2016) provide evidence from a 'lab in the field' set of experiments which suggests that there are significant differences in social norms related to trust between southern and northern Italians.

<sup>3</sup>Greif's work falls into a much broader literature which views institutions as the carriers of carriers of the historical past. Also see North (1990), David (1994), Engerman and Sokoloff (1997), La Porta et al. (1998), Acemoglu et al. (2001), Dell (2010), Voigtländer and Voth (2012), Alesina et al. (2013), and Jha (2013).

<sup>4</sup>Similarly, Tabellini (2008a) argues that the cultural attribute "generalized morality" (i.e., individual values that support the generalized application of norms of good conduct) evolves from a society's institutional past and is related to a host of indicators of well-functioning political institutions, trust, and respect in the present. Greif and Tabellini (2017) build on these insights, showing how kin-based cultures coevolve with clan-based enforcement institutions while "generalized morality" cultures coevolve with more corporate, group-independent institutional forms. Gorodnichenko and Roland (2017) instrument for the individual/collectivist cultural distinction using genetic data, showing that this distinction is at the root of differences in innovation across societies.

<sup>5</sup>Some papers have also exploited historical patterns that are likely only explicable through culture. For instance, Gangadharan

The above-cited papers have done much to isolate the role that culture plays in long-run economic outcomes. However, despite providing significant insights, each approach has a shortcoming. Instrumental variables help to remove the bias from the regression coefficients in question, but they do little to provide additional insight into the pathway through which culture is transmitted and affects outcomes.<sup>6</sup> Regression discontinuity analyses address this concern—so long as there are not multiple important causal implications of the discontinuity in question—but they generally suffer from the fact that the discontinuity under study is not completely exogenous. Long borders, the most commonly used feature over which regression discontinuity analyses are employed, are rarely random; they are generally formed by geographical barriers, the commercial importance of the region, and the capacity of the center to collect taxes from either side of the border. While one can run a test for pre-existing differences on either side of the discontinuity (e.g., Becker et al. 2016), such data from the pre-existing period are often much worse due to their historical nature and are subject to omitted variable bias. Hence, disentangling border effects from pre-existing effects is a significant challenge. Finally, most experiments seeking to understand how people with different cultural backgrounds behave in different environments do indeed shed light on how people act, but they have difficulty isolating the cultural determinants of subjects' actions. For instance, if subjects from northern and southern Italy act different in trust games (Bigoni et al. 2016), it is possible that this is due to differences in social capital between the two regions (Putnam 1993) or some other cultural factor; and there are many other differences between the two regions which are difficult to account for in an experimental setting.

Our paper aims to address these shortcomings by *combining* a "lab in the field" experiment with a natural experiment.<sup>7</sup> The idea is straight-forward: if one can find a natural experiment in which a historical border was *arbitrarily* drawn, even if over a small expanse, *and* there is reason to believe that different historical institutions on either side of the border affected culture, one can more finely pinpoint the historical mechanisms feeding into cultural differences by running laboratory experiments on subjects on either side of the border. The primary challenges of such an undertaking are: i) finding an arbitrarily drawn border—as noted above, most long borders are not arbitrary; ii) finding a border in which there is reason to believe that there were cultural differences generated by the border; and iii) isolating the border effects from other economic determinants which may also be different on either side of the border.

We address these challenges by running trust games on either side of an old Austrian (Habsburg) border in the Udești Commune located in northeastern Romania. This commune provides an ideal setting for testing the role that historical institutions played in generating modern-day trust behavior for numerous reasons. First, a "natural experiment" occurred within the commune after it was annexed by the Austrians following the Treaty of Küçük Kaynarca in 1774, in which the Ottomans ceded the Bukovina region of Moldavia to the Austrians (see Figure 1). One of the villages in the commune, Știrbăt, was left on the Ottoman side despite

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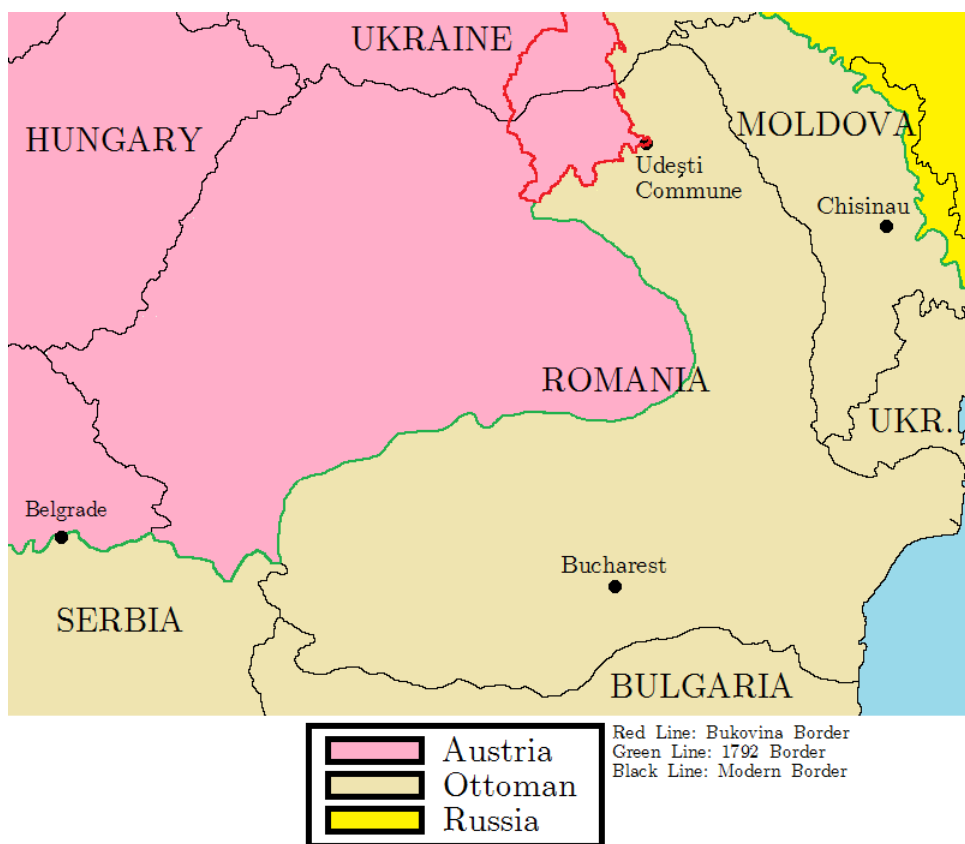
et al. (2017) run lab in the field experiments in Cambodia, showing that participants who were directly affected by the Khmer Rouge genocide exhibit more anti-social behavior in the present. Algan and Cahuc (2010) exploit variation in immigration patterns to the US to isolate the inherited component of trust and test its impact on economic outcomes. Giuliano (2007) also exploits immigration patterns to the US to isolate cultural differences between southern and northern Europeans with respect to how long children live with their parents. Giuliano's findings suggests that culture accounts for several stylized facts that purely economic explanations cannot account for. More insight into inter-generational cultural transmission is provided by Giuliano and Nunn (2016), who find that groups whose ancestors lived in more stable environments place a greater emphasis on maintaining tradition in the present.

<sup>6</sup>A large theoretical literature addresses the mechanisms through which cultural transmission occurs. Bisin and Verdier (2001), Tabellini (2008b), and Guiso et al. (2008) focus primarily on the intra-family transmission process, while Dohman et al. (2012) highlight the role of assortative mating and the local environment. Bisin and Verdier (2017), Kimbrough et al. (2008), Greif and Tadelis (2010), and Iyigun and Rubin (2017) provide arguments for how culture and institutions interact.

<sup>7</sup>For a recent survey of the "lab in the field" literature, with all its benefits and pitfalls, see Gneezy and Imas (2016). One of the authors of the present paper performs a similar "lab in the field on a natural experiment" to provide insight into public good provision in India (Chaudhary et al. 2017).

there being a more natural river border to the north of Știrbăt (see Figure 2). Historical records indicate that this decision was due in large part to the idiosyncratic predilections of one landowner in Știrbăt, not some economic or geographical calculus. This "natural experiment" therefore satisfied the *arbitrariness criterion*. The border was not created by economic, military, or even geographical considerations, but was the result of the idiosyncratic desires of one individual over two centuries ago.

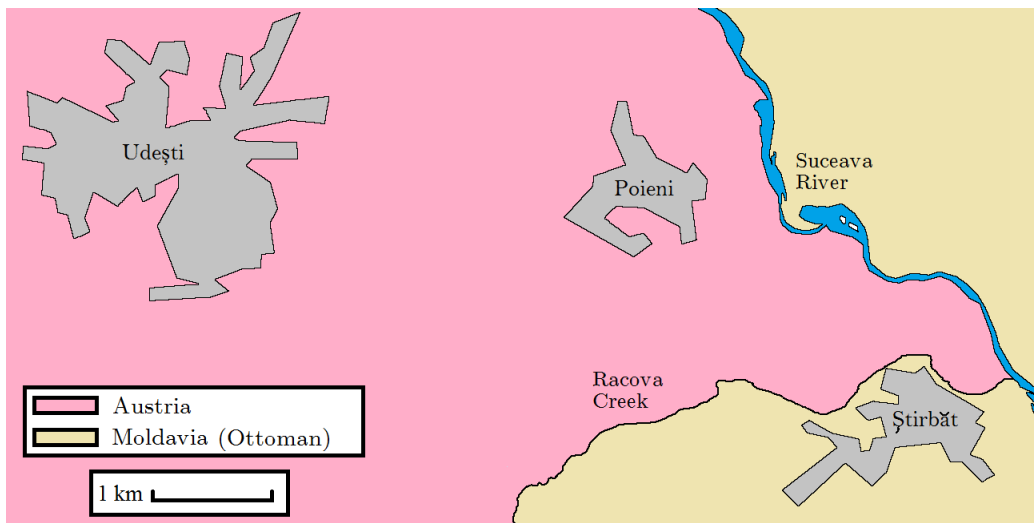
Figure 1: Habsburg Border in Late-18th Century



Second, a large literature suggests that the decentralized, efficient, and (relatively) corruption-free Habsburg administration fostered trust in government (Becker et al. 2016; Karaja 2013; Dimitrova-Grajzl 2007; Subtelny 2007; Grosfeld and Zhuravskaya 2013), while the Ottoman administrative system known as the *malikane* system was rapacious (İnalçık 1973; Coşgel et al. 2013), and it helped contribute to a relative paucity of trust in the former Ottoman lands (Dimitrova-Grajzl 2007; Karaja 2013). Although Moldavia (i.e., the region containing Știrbăt) entered the Russian sphere of influence in 1829, Russian administration was similarly rapacious (Subtelny 2007; Grosfeld and Zhuravskaya 2013). The historical border therefore satisfies the *cultural difference criterion*. There is reason to believe that cultural differences were *generated* by institutions on other side of the border and are not merely associated with the border for spurious reasons.

Third, the commune was reunified in 1919, meaning that for nearly a century the commune has shared common governance, fiscal institutions, communist legacies, and many other features one might expect would affect contemporary trust. The natural experiment therefore satisfies the *historical channel criterion*. Post-World War I economic and political events cannot explain differences between the villages, since they have

Figure 2: Udești, Poieni, and Știrbăt Villages



been subject to the same forces for nearly a century. If differences in trust across villages are found, especially if they are in the expected direction, institutional differences generated by the historical border are therefore a plausible root cause.

Finally, our experiment allows us to parse whether those whose families have lived in the villages for multiple generations—and were thus presumably more imbued with the culture of their ancestors—exhibit different trust behavior than those who are relative newcomers. Ancestral information was obtained in a post-experiment survey. Should such differences arise, they would provide further evidence that the inter-generational transmission of culture underlies our results rather than some unobserved differences between the villages.

The experimental design entails playing trust games in two villages on the Austrian side of the border (Udești and Poieni)<sup>8</sup> and one on the non-Austrian side (Știrbăt). Figure 2 depicts just how close these villages are to each other; each is within walking distance of the other two villages. Ideally we would have run trust games in a second village on the non-Austrian side, but Știrbăt is the only village in the commune that satisfies this criterion. Participants in all villages played trust games with both co-villagers and people from one of the other villages (hence, outsiders). Since (Austrian) Udești is larger (1,100 households) than (non-Austrian) Știrbăt (300 households) or (Austrian) Poieni (270 households), our design entails that half of the 200 participants from Udești play the games with one of the 100 participants from Știrbăt, while the other half play with one of the 100 participants from Poieni. Our "treatment" group is therefore the Știrbăt participants and those from Udești who played with a participant from Știrbăt. These participants played the exact same game, with the "outsider" they played with being from a village on the opposite side of the old border. Meanwhile, our "control" group consists of Poieni participants and those from Udești who played with a participant from Poieni. Both of these villages were on the Austrian side of the old border, and—if the historical border indeed matters for present day trust—we should not expect to find differences across villages in the trust decisions made by participants in this group.

<sup>8</sup>Udești is the name of both the commune as well as a village in the commune. To avoid confusion, we refer to the former as the "Udești Commune" throughout the paper.

Our findings support the conjecture that historical institutions affect contemporary trust and that an inter-generational transmission mechanism can account for many of the results. First, we find that participants on the Austrian side of the border have greater trust of subjects from outside their village (i.e., they send more tokens). No differences in trust behavior are found among the control groups, in which participants from the Austrian side of the border played the game with each other. Second, we find that these inter-village differences in trust of outsiders *only* arise for subjects whose grandparents are from the village in question. We interpret this result as evidence of an inter-generational transmission mechanism; it is only those subjects whose families experienced the institutional differences of 1774-1919—or, at the very least, subjects whose grandparents grew up with people that experienced these differences—that showed differences in trust of outsiders.<sup>9</sup>

Although these specific findings will be difficult, if not impossible, to replicate (in such small villages, one would be worried about playing the same game twice), their external validity is suggested by their consistency with much of the literature cited above. Although alternative hypotheses could possibly explain our results—in such a micro-level study, it is possible that some unknown, yet important, event in one of the villages’ historical past is responsible for our results—the fact that they are consistent with our *ex ante* hypotheses suggest the strong likelihood that the historical natural experiment is at least in part causally related to the observed differences in trust across villages. Moreover, our novel identification strategy permits a test of cultural transmission that is unavailable in survey data, even if clever instruments or regression discontinuities are employed. Our results suggest that cultural traits—stemming from historical differences in institutions—are very sticky. Even after reunification, World War II, and decades of Communist rule, trust differences still persist in the villages in our study.

This paper proceeds as follows. Section 2 overviews the relevant historical facts of the villages in which we conduct the experiment. Section 3 summarizes the experimental procedure. Section 4 informally maps out a theory, based on the literature, of what we should expect to see in the experiment if the cultural transmission of trust norms is indeed salient. Section 5 reports the results and Section 6 concludes.

## 2 Historical Background: The Udești Commune

### 2.1 Habsburg, Ottoman, and Russian Administration

There were numerous institutional differences between the Austrian Habsburg Empire and their two eastern neighbors, the Ottoman Empire and Russian Empire, which may affect contemporary trust. Dimitrova-Grajzl (2007) points to institutional and legal advantages provided by the Habsburgs, including protection of property rights, relative freedom from corruption, autonomy for local governance, and provision of public goods. With respect to property rights, the Austrians permitted private ownership as early as the 17th century, abolished serfdom in the late 18th century (at precisely the time the Ottomans ceded Bukovina to the Austrians), increased peasants’ rights, ended censorship, and ensured freedom of enterprise in 1859. Meanwhile, the Ottomans did not permit private ownership until the 19th century (all land belonged to the Sultan) and permitted local military lords to take arbitrary levies and surcharges, resulting in massive

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<sup>9</sup>Cultural transmission cannot account for all of our results. Among participants whose grandparents are *not* from the village, those from the Austrian side of the border trust co-villagers less than those from the non-Austrian side. The most straightforward explanation for this result is that there is a selection bias regarding people who moved into the village (i.e., they moved into the village because they think of people in the village as especially trustworthy). Indeed, when we control for whether one has lived in the village their whole life, the difference in the amount sent to one’s co-villagers between those who have grandparents from the village and those who do not is statistically insignificant.



extortion and oppression of the masses, especially in the southeastern European Ottoman provinces. In the Ottoman Empire, the late 17th century saw the rise of local notables who acquired life-long tax farms as the Ottoman fiscal situation deteriorated (Inalcik 1973; Hourani 1981; 1991, ch. 15; Balla and Johnson 2009). The Ottoman fiscal situation encouraged predatory behavior on the part of tax farmers—illegal taxes and land reallocation were common—and the sultan was hesitant to intervene since this may have worsened his fiscal straits (Coşgel et al. 2013; Karaja 2013).

There is a large literature, summarized by Becker et al. (2016), suggesting that the Austrian bureaucracy was known for its honesty, diligence, fairness, efficiency, and freedom from corruption. When the Habsburgs acquired new territories, locals were sent to Vienna for extensive administrative training before returning to work in the bureaucracy. As a result, the Habsburg bureaucracy was largely respected by the population, even in newly acquired territories (Becker et al. 2016). This contrasts significantly with the administrations of the Ottoman and Russian Empires, which were widely known for corruption. After the 17th century, corruption became prevalent among Ottoman bureaucrats (who were often recruited as young slaves) and tax farmers, who often used their position to attain as many rents as possible from the masses (Dimitrova-Grajzl 2007). Bureaucrats could not exert authority over the masses or the land without an explicit mandate from the sultan, resulting in highly unpredictable rules and taxation and a legacy of distrust of public officials (Inalcik 1973; Karaja 2013). In the Russian Empire, local elites were given socio-economic privileges in order to ensure their subservience to the tsar, who imposed oppressive cultural, social, and economic policies on regions that were not fully integrated or assimilated into the empire (Subtelny 2007; Grosfeld and Zhuravskaya 2013).

Perhaps the most important Austrian institutional feature was the relative autonomy of local governance (including in Romania, as we highlight in the next section). The Habsburgs had long permitted (though perhaps not desired) strong free independent cities, which were independent centers of political, economic, and cultural activity. Administrative and cultural autonomy was also the norm in the more peripheral Austrian territories, where locals manned the bureaucracy and were permitted wide purview over economic, religious, and cultural matters (Subtelny 2007; Grosfeld and Zhuravskaya 2013). In contrast, the Russians rarely compromised on their autocratic prerogatives or gave political power to local elites. As a result, there were few local power bases outside of the central government, and the ties between local elites and the masses were much weaker than they were in the Habsburg lands (Subtelny 2007). Meanwhile, the Ottoman political structure became decentralized after the 17th century, as local notables acquired control over most local political and economic affairs (Barkey 1994; Coşgel et al. 2013). But unlike the Austrian regime, which maintained a tight relationship with the local nobility and therefore maintained some level of control over corruption, Ottoman decentralization was a result of the center’s inability to collect revenue or provide local law and order. Local elites dominated most administrative and military posts and there was little the center could do to prevent corrupt and expropriation.

In short, the institutional differences between the Austrian, Ottoman, and Russian Empires relevant for this study are autonomy of local governance, freedom from corruption, and protection of property rights. A growing literature suggests that these differences helped shape cultural attitudes that have persisted to the present day. Becker et al. (2016) employ a regression discontinuity around the old Habsburg border and find that Habsburg affiliation increases trust with respect to government institutions and reduces corruption (i.e., bribery) in contemporary courts and police. They argue that norms of functional citizen-state interactions, along with a decentralized and honest bureaucracy, affected trust in local public services and levels of corruption in local administration. Karaja (2013) uses a similar design across the old Habsburg-Ottoman border and finds higher willingness to bribe, lower trust of public officials, and lower growth in GDP per

capita in the old Ottoman lands. Dimitrova-Grajzl (2007) uses a variety of econometric techniques and finds that Habsburg successor states have more efficient market economies, greater protection of property rights, lower risk of government exploitation of private investors, lower levels of corruption, higher trust in the government, greater governmental effectiveness, and stronger civil society than Ottoman successor states. These outcomes can all be explained by the differences in Austrian and Ottoman institutions highlighted in this section. Grosfeld and Zhuravskaya (2013) find that within Poland, Habsburg and Russian legacies affect contemporary voting patterns, with people in former Habsburg lands being more likely to vote for both liberals and religious conservatives. They cite Austrian local autonomy, especially with regard to religious issues, as the reason for support of religious conservatives, while differences in governance institutions affected beliefs in democracy on both sides of the border and thus support for liberals.<sup>10</sup>

This literature therefore suggests that Austrian, Ottoman, and Russian institutional differences may still affect a host of economic, cultural, and political features generally considered important for economic development. Foremost among these is *trust*. Although the literature focuses on trust in government, a clear implication of this literature is that these differences could be manifested in trust of “outsiders” more generally. Austrian officials were “insiders”—local elites who became steeped in Austrian bureaucratic practices. Meanwhile, Ottoman and Russian government officials would have been outsiders to a vast majority of their subjects. Their widespread corruption and imposition on property rights decreased trust in public officials, and likely decreased trust in “others” more generally.

A large experimental literature suggests that “outgroup” trust is in part culturally determined (Fershtman and Gneezy 2001; Bahry et al. 2005; Yuki et al. 2005; Ruffle and Sosis 2006), although it can also be generated in the lab (Chen and Li 2009).<sup>11</sup> The Austrian, Ottoman, and Russian institutional legacies therefore suggest—should the cultural differences generated by these institutions over a century ago be sticky enough to exist in the present—that *outgroup trust* should be greater for descendants of the Austrian Empire. In Section 4, we more formally lay out this and other predictions related to differences in trust between those from the Austrian and non-Austrian sides of the old border. Before we provide the intuition underlying these hypotheses, we provide the historical background of the natural experiment in Romania that we exploit (in Section 2.2) and summarize the game that participants on both sides of the border played (in Section 3).

## 2.2 The Udești Commune: A Brief History

The Udești Commune is located in the Moldavian region (Suceava County) of northeastern Romania.<sup>12</sup> It is comprised of 11 small villages over approximately 11.04 km<sup>2</sup> (Udișteanu 2005), ranging from the very small (Mănăstioara, which has 23 households), to the largest village Udești, which has approximately 1,100 households. There is evidence of human inhabitation of Udești from the Paleolithic and Neolithic eras, and there has been permanent settlement since at least the late medieval period (Marțolea 1986). The largest of the villages in terms of population and size, Udești, was formed no later than the 1580s; it was originally a settlement for corvée workers of the royal court and other high officials (Marțolea 1986, p. 35). The inhabitants largely engage in agriculture.

<sup>10</sup>In a related study, Grosjean (2011) finds that Ottoman rule is associated with lower contemporary financial development, even within countries that were partially ruled by the Ottoman Empire.

<sup>11</sup>The “ingroup favoritism” literature is a large and old one in psychology and sociology. Ruffle and Sosis (2006) note that “hundreds of in-group-out-group bias studies fill psychology and sociology journals.” Indeed, this literature is large enough to have warranted a meta-analysis; see Balliet, Wu, and De Dreu (2014).

<sup>12</sup>The Udești Commune was not a commune until the 20th century, but we use this terminology to describe the entire area, as opposed to the individual village of Udești.

Prior to 1775, the entire Udești Commune was part of the Bukovina region of Moldavia, an historical region which spans parts of modern day Romania, Moldova, and Ukraine. Moldavia fell under indirect Ottoman control in 1454, although it retained a degree of independence (Inalcik 1973, p. 27). Like other Christian vassal principalities of the Ottoman Empire (e.g., Wallachia, Transylvania, Dubrovnik, Georgia, and Circassia), Moldavia was ruled by its own princes as an Ottoman vassal state.

The major event in Udești history that we exploit in this paper is the partition following the signing of the Treaty of Küçük Kaynarca. Under the terms of this treaty, which ended the Russo-Turkish War in 1774, the Ottoman Empire ceded Bukovina to the Austrian Habsburg Empire (Udișteanu 2005).<sup>13</sup> As can be seen in Figures 1 and 2, the Udești Commune is located on the border of Bukovina and what would remain Ottoman Moldavia. The citizens of Bukovina, including those in the Udești Commune, were required to take an oath in 1777 to their new Austrian empress Maria Theresa. The "Oath of Faith to Austria" stated:

I, Maria Terezia, widow and sovereign empress of the Hungarian Land and of Bukovina, etc. ... approach every person who is an inhabitant of Bukovina Districts, who lives here, or who owns lands here, who is our servant, who pays tribute to us or who is worthy of our protection ... First of all we assure you of our imperial and royal mercy ... For this, we need no more than for the inhabitants of this district of Bukovina, both the religious and the laic ones and the common people who live here, to submit their oath and pledge to be our subjects, becoming our obedient taxpayers. Based on this oath, they pledge to uphold the justice and the order that we instate, agreeing for us to take care of them and always have faith in us and in the fact that we will always be just and correct with Bukovina district (quoted in Udișteanu 2005).

However, not all Udești residents were willing to live under Austrian rule. In 1777, one of the major landowners in the village, Ruxanda Știrbeț, was called to submit an oath in the name of her village Chilișeni to the new Austrian rulers (Chilișeni is located on the west bank of the Racova Creek, see Figure 2). Știrbeț refused to participate in the ceremony, which she considered "to be despotic and a crippling of Moldavia" (Marțolea 1986, p. 13). Afterwards, Știrbeț left her house in Chilișeni and moved to a group of houses on the opposite side of the creek, which were at the time still part of Chilișeni, claiming that this land was still part of Moldavian territory. When brought up before the before the Austrian Inventory Commission on December 13, 1782, Știrbeț argued that "the largest part of Chilișeni Village is in Moldavia and [Știrbeț] owns all the estate." (Marțolea 1986, p. 12). In 1786, the Austrians recognized this claim and set a border stone on the right bank of Racova Creek, between Chilișeni and Știrbeț's new settlement, which would later bear her name, Știrbăt. The Austrians also placed a border station on the left side of the bank, clearly demarcating Austrian from Moldavian (Ottoman) territory (Marțolea 1986, p. 13).

Soon after Știrbăt was formed, its population grew as families from Bucovina, Transylvania, and Maramureș, many of whom viewed themselves as Moldavian, escaped foreign occupation. Some were chased by Austrian authorities and compelled to return to their lands; others refused and stayed in Știrbăt. Today, Știrbăt still has numerous families whose names are from the Bucovina, Transylvania, and Maramureș regions (Marțolea 1986, p. 14). These escapees tended to be good farmers and animal breeders, and they shortly blended in with the local population, eventually gaining the right to own their own land. By 1828, there were 43 households in Știrbăt and the Moldavian Treasury in 1845 showed 51 households (Marțolea 1986, p. 15). Most of the inhabitants were slaves or corvée workers until the formation of the United Principalities of

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<sup>13</sup>The terms of the treaty permitted the Russian Empire to intercede when necessary on behalf of Eastern Orthodox Christians living in Moldavia.

Moldavia and Wallachia in 1859. In 1864, Prince Alexandru Ioan Cuza abolished slavery and made peasants landowners (Marțolea 1986, p. 53). This contrasts with Austrian Bukovina (i.e., Udești), where the Austrian government eliminated slavery on the commune immediately after taking control in 1775, instead issuing a decree permitting serfdom. Bukovinian peasants were required to provide 3-6 days a week of unpaid work for the masters of the estate (Marțolea 1986, p. 51). These regulations were relieved in 1835, when a decree by the Emperor Ferdinand stated that all peasants' land was henceforth their private property.

The villages in the Udești Commune under Austrian control (including Udești and Poieni, two of the three villages in which we conduct the experiments) remained under Austrian rule until Romania established control over Bukovina in 1919, with the collapse of Austria-Hungary after World War I. Moldavia (including Știrbăt) fell under various rulers following the Treaty of Küçük Kaynarca. Until the Russo-Turkish War of 1828-29, it remained under both Ottoman and Russian spheres of influence. After the war, it fell under Russian domination for three decades until the conclusion of the Crimean War. As part of the Treaty of Paris (1856) in the aftermath of the Crimean War, Moldavia unified with Wallachia (to its south) to form the independent state known as The United Principalities of Moldavia and Wallachia. The United Principalities were the predecessor to the Kingdom of Romania (1881-1947), which eventually incorporated Bukovina in the Treaty of Saint Germain (1919). In 1947, the Kingdom of Romania was proclaimed the Socialist Republic of Romania, and it remained under one party Communist rule until 1989. In 1950, under the communist regime, the Udești Commune was organized as a commune managed by a Popular Council. On December 24, 1960, an administrative reform placed the Udești Commune within the Suceava District (Udișteanu 2005, ch. 1).

The upshots of this short history of the Udești Commune are: i) one village in the commune, Știrbăt, fell under non-Austrian rule for 144 years (1775-1919), while the rest of the commune, including Udești and Poieni, fell under Austrian rule; ii) these differences were not the result of geography, military strategy, or any of the conventional causes of territorial boundaries, but the predilections of one landowner (Ruxanda Știrbeț); iii) part of the initial population of Știrbăt was selectively chosen, as it consisted largely of people escaping Austrian rule for some reason or another; iv) the commune has been reunified for nearly a century (since 1919), and it has experienced a World War, an extended period under Communist rule, and the post-Communist era as one commune.

These features combine for an ideal natural experiment to test whether trust norms are transmitted over generations long after the cessation of the conditions under which those norms formed in the first place. First, the boundary within the commune between the Austrian and Moldavian side is about as exogenous as one could hope for, being generated primarily by the predilections of one landowner. Second, these villages fell under the rule of very different regimes which, as outlined in Section 2.1 and later more formally in Section 4, suggest the possibility that different trust norms were formed *over a century ago* between the villages. Third, to the extent that selection into Știrbăt (and out of Udești and Poieni) existed in the late-18th century, such selection should affect trust in same direction as the institutional differences (i.e., residents of Știrbăt should be less trusting of outsiders). Finally, the villagers have been united under the same national and local governance for nearly a century, meaning that observed differences in trust behavior are not a result of different experiences with communism or any other post-World War I phenomenon. In the following section, we detail the "lab in the field" experiment designed to exploit this natural experiment.

### 3 A Lab in the Field on a Natural Experiment: Design and Implementation

#### 3.1 Experiment Design and Instructions

We designed a "lab in the field" experiment to exploit the natural experiment discussed in Section 2.2. Participants played simple trust games (as in Berg et al. 1995) in one village on the Ottoman/Russian (hence, non-Austrian) side of the border, Știrbăt, and two villages on the Austrian side of the border, Udești and Poieni. Participants played simplified versions of trust games played hundreds of times in university laboratories.

Participants played the same trust game multiple times. In each game, they were first told the town of residence of the person they would be matched with. They were then told whether they would be a "sender" or "receiver", although these terms were not used (see Appendix B for instructions in English and Appendix C for instructions translated into Romanian). The exact identity of one's partner was not known; matches were randomly determined by a spreadsheet, so even the experimenters did not know the identity of the matched pairs. Participants were given an incentivized quiz before making their decisions in the first game they participated in (see Appendix B.3).

The sender made one decision: how many of three tokens to send over to his or her partner. They made this decision by simply circling 0, 1, 2, or 3 on a handout provided to them by an experimenter (see Figure 3). Participants were instructed that they would keep any tokens they did not send, while any tokens they sent would be multiplied by 3 and given to the receiver. Each token was equivalent to 3 Romanian lei, or \$0.75.

Figure 3: Handout Participants Filled Out to Make the Send Decision

**0**                      **1**                      **2**                      **3**

Circle one of the above numbers. The number you circle is the amount of your 3 tokens you will send to the participant with whom you are matched.

Please only circle one number. If you change your mind, cross out your choice and make a new choice.

Senders were then told that receivers would make a choice of how many of the tokens they received to return to the sender. Receivers make 3 decisions: how much to return to the sender conditional on the sender sending 1, 2, or 3 tokens (see Figure 4). If the sender sent 0, there was nothing for the receiver to return, so we circled "0" for participants. For each of the three decisions, receivers were allowed to circle any number between 0 and three times the amount sent to them to return to the sender.

Participants first played the game as a sender, matched with a receiver from either their own or another village, and then played the game as a receiver, matched with a *different* sender from that village. All participants played the game at least four times (twice as a sender and twice as a receiver), matched with co-villagers and outsiders. Instructions were similar, although abbreviated, for receivers. After participants completed the final treatment they took a short demographic survey (see Appendix B.4 for details).

Figure 4: Handout Participants Filled Out to Make the Return Decision

Please circle only one number in each box. The number you circle is the amount of tokens you will **return to your partner** for each possible number of tokens they send you.

We have circled the 0 in the first box, because if your partner sends zero, you have no choice but to return 0 to your partner.

If your partner sends	You receive	Circle a number to return to your partner
0	0	<input type="text" value="0"/>
1	3	<input type="text" value="0 1 2 3"/>
2	6	<input type="text" value="0 1 2 3 4 5 6"/>
3	9	<input type="text" value="0 1 2 3 4 5 6 7 8 9"/>

### 3.2 Treatment and Control Groups

As of July 2016, there were around 1,100 households in Udești, 300 households in Știrbăt, and 270 households in Poieni. Since Udești is over three times the size of the other two villages, we recruited more subjects from Udești. In all, there were 200 participants from Udești and 100 participants from both Știrbăt and Poieni, equaling 400 total participants. Given the unequal numbers from each of the villages, we augmented the game slightly for participants from each of the villages in a manner described below.

200 of the participants played in our "treatment" group and 200 played in our "control" group. Our treatment groups included 100 participants from both Udești and Știrbăt, two villages on opposite sides of the old Habsburg border. All participants played the game multiple times. In the first and third games they played as a sender and in the second and fourth games they played as a receiver. The 100 Udești participants in the treatment group played two games with people from Udești and the other two with people from Știrbăt while the 100 Știrbăt participants played two games with people from all three villages (in the fifth game they acted as sender and in the sixth as receiver, playing with participants from Poieni). To control for order effects, we split each of these groups into two. 50 of the Udești participants played (Udești-Udești-Știrbăt-Știrbăt) and 50 played (Știrbăt-Știrbăt-Udești-Udești), while 50 of the Știrbăt participants played (Știrbăt-Știrbăt-Udești-Udești-Poieni-Poieni) and the other 50 played (Udești-Udești-Știrbăt-Știrbăt-Poieni-Poieni). For a summary of the order of play for both the treatment and control groups, see Table 1.

The control group consisted of 100 participants from both Udești and Poieni. These two villages were both on the Habsburg side of the old border. Since there may be many differences between people from the three villages besides their institutional and cultural heritage—for instance, Udești is larger than the other two villages—it is useful to compare actions of participants on the same side of the old border. Comparisons within the control group help test whether there are idiosyncratic differences between villages that have nothing to do with the old border.

Table 1: Order of Play in the Treatment and Control Groups

Village	Order	N
<i>Treatment</i>		
Udești	Udești - Știrbăt	50
Udești	Știrbăt - Udești	50
Știrbăt	Știrbăt - Udești - Poieni	50
Știrbăt	Udești - Știrbăt - Poieni	50
<i>Control</i>		
Udești	Udești - Poieni	50
Udești	Poieni - Udești	50
Poieni	Poieni - Udești - Știrbăt	50
Poieni	Udești - Poieni - Știrbăt	50

Like the treatment group, all participants in the control group played the game multiple times. In the first and third games they played as a sender and in the second and fourth games they played as a receiver. The 100 Udești participants in the control group played two games with people from Udești and the other two with people from Poieni while the 100 Poieni participants played two games with people from all three villages. To control for order effects, 50 of the Udești participants played (Udești-Udești-Poieni-Poieni) and 50 played (Poieni-Poieni-Udești-Udești), while 50 of the Poieni participants played (Poieni-Poieni-Udești-Udești-Știrbăt-Știrbăt) and the other 50 played (Udești-Udești-Poieni-Poieni-Știrbăt-Știrbăt).

### 3.3 Experiment Implementation in the Udești Commune

We employed the Bucharest-based research firm Cult Market Research (CMR) to implement the experiments on July 21-23, 2016. Six researchers from CMR carried out the experiments in secondary schools, spending one day in each village. Prior to conducting the experiments, CMR made local contacts to serve as field recruiters: 3 in Udești, 1 in Poieni, and 1 in Știrbăt. These contacts were all well-known in their village and were introduced to CMR by the mayor. The field recruiters worked with two CMR researchers to organize the experiment (e.g., find a location) and sign up participants one week prior to implementation. The popularity of the field recruiters is one of the primary reasons we were able to achieve such high turnout for the experiment. And, luckily, the weather was beautiful the three days CMR conducted the experiment.

Importantly, CMR was never informed about the natural experiment this paper exploits. We had many discussions with the CMR researchers regarding the implementation of the experiment, the villages involved, and the manner in which they would collect and input data, but we never discussed the old Austrian border central to our identification strategy. Hence, the experiment was double-blind, with neither participants nor experimenters knowing the research question.

CMR conducted the experiment with 20-30 participants at a time, all playing the same treatment. Instructions were read aloud in Romanian, and all instructions and handouts were translated into Romanian. About 50% of participants needed additional explanations for at least one of the tasks, although all participants also took a quiz to test their understanding. Participants largely followed instructions and were silent during the experiment except when asking questions. Each session took about one hour to complete.

On the day of the experiment, participants received a 10 lei (\$2.50) show-up fee. They were told that they could make much more during the experiment, and that in one week a representative of CMR would

come back to the village to pay their earnings. After the experiment was conducted, the CMR researchers entered the data into a de-identified spreadsheet, which returned how much each participant earned in the experiment (participants were identified by a number, and CMR kept a separate spreadsheet that matched participants' names to their ID number). A CMR researcher returned one week later to pay participants their earnings.

## 4 Testable Predictions

Before proceeding to the experimental results, we propose numerous predictions regarding the actions of the participants. We focus on comparisons within the treatment group (Udești and Știrbăt) and within the control group (Udești and Poieni). Participants played directly comparable games within the treatment group and within the control group. For instance, participants from both villages in the treatment group played their first four rounds with two participants from Udești and two participants from Știrbăt. We do not analyze the fifth and sixth rounds of Poieni and Știrbăt participants because our design does not allow us to distinguish between order and border effects.

We do not propose a formal model in this section because the intuition for our predictions is taken from the literature and is straight-forward. We therefore do not need a model to generate unexpected or counter-intuitive predictions. We begin by listing predictions with respect to expected behavioral differences in the treatment and control groups and proceed to provide predictions that would hold true if the mechanism is intra-family, inter-generational cultural transmission.

First, we employ the literature on Habsburg-Ottoman (and Russian) institutional differences overviewed in Section 2.1. This literature helps us generate predictions regarding the actions of participants on either side of the border *conditional* on these differences being manifested to some degree today (possibly through inter-generational cultural transmission, which we turn to shortly). This literature suggests that the Habsburg administration was relatively decentralized, efficient, well-respected, and free from corruption, while Ottoman and Russian administration was rapacious and predatory, extracting the maximum rents possible. It follows that people living in the Habsburg lands should have had greater trust in government (Becker et al. 2016), and this may have spilled over into more generalized trust (Karaja 2013). Importantly, this type of trust was not generated by social ties or local norms. Instead, it is trust in those outside of one's social group, especially on the non-Austrian side of the border, where administrators' ties to the local community were often weak. This is a key distinction, because trust outside of one's social group is difficult to generate (Fershtman and Gneezy 2001; Bahry et al. 2005; Yuki et al. 2005; Ruffle and Sosis 2006; Balliet, Wu, and De Dreu 2014), but it is one of the keys to facilitating impersonal exchange (Arrow 1972; Greif 1994, 2006). We therefore expect that, if norms generated by institutional differences in the 18th-19th century are "sticky" enough to still exist, people living on the Austrian side of the old border would trust outsiders more than people living on the non-Austrian side. Of course, we expect to see no differences in trust of outsiders between villages in our control group, as both villages were on the Austrian side of the border.

Moreover, Section 2.2 suggests that there may have been selection into (non-Austrian) Știrbăt and out of (Austrian) Udești in the late-18th century. Many migrants into Știrbăt were native Moldavians escaping some form of repression in the recently-annexed Bukovina territory. With respect to trust attitudes, it follows that these migrants should have been more trusting of the people in the location they escaped to (Știrbăt) and less trusting of people in places they escaped from (Udești). Fortunately, for the sake of the experiment, this selection yields the same prediction regarding trust of outsiders as do differences in



Austrian and non-Austrian administration. In other words, in the context of the trust game experiment, administrative differences and selection into Știrbăt yield the following prediction:

**Prediction 1:** In the treatment group, participants from Știrbăt will send less when playing the game with outsiders than will participants from Udești. In the control group, there will be no difference in the amount sent to outsiders between participants from Udești and Poieni.

The prediction with respect to how much one sends to co-villagers is not as straight-forward, as there are two countervailing factors at play. On the one hand, if people from the Austrian side are simply more trusting of others in general, including people from their own village, they should send more to co-villagers than people from the non-Austrian side. On the other hand, lower trust of outsiders on the non-Austrian side (Prediction 1) may have made intravillage trust all the more important, as the possibilities for exchange outside the village would have been lower (Greif 1994). If this effect is strong, it would entail that people on the non-Austrian side are more likely to trust co-villagers. Since it is unclear *ex ante* which effect is stronger and our experiment does not allow us to parse trust into these two countervailing effects, we do not make predictions with respect to within-village trust. We can, however, make a statement about *relative* trust: i.e., how trusting people are of co-villagers relative to outsiders. The above discussion suggests that people from the non-Austrian side may be more trusting of co-villagers than people from the Austrian side, in which case (in combination with Prediction 1) the difference in trust between co-villagers and outsiders would be greater on the non-Austrian side. Even if people from the non-Austrian side are less trusting of co-villagers because their general level of trust is lower, if this is at all counteracted by historic exchange opportunities, the difference in trust between co-villagers and outsiders should still be greater on the non-Austrian side, all else equal. In the context of the experiment, this insight yields the following prediction:

**Prediction 2:** The difference in the amount sent when playing the game with co-villagers versus outsiders will be greater for participants from Știrbăt than those from Udești. In the control group, there will be no difference in the amount sent between participants from Udești and Poieni.

Next, we turn to the "return" decision made in the second stage of the trust game. The return decision does not measure trust. Instead, it measures trustworthiness; the receiver rewards a sender for trusting them, and they will have no further interaction nor will they ever know each other's identities. Trustworthiness is different from trust because it is conditional; it is only expressed when the other person exhibits trust in the first place. Nothing we know of in the Habsburg-Ottoman-Russian literature sheds light on whether we should expect to see stronger trustworthiness from participants on one side of the border. Hence, we do not make a prediction with respect to the return decision. But these decisions are still important for our interpretation of the send decision. As Fershtman and Gneezy (2001) note, a sender could rationally mistrust the other group if participants from the other group are indeed likely to return less on average. This yields an interpretation that players are simply acting rationally, and that "statistical discrimination" may be an optimal strategy in the absence of other information. Hence, in the analysis we will note whether there is any evidence for statistical discrimination.

Finally, we turn to the cultural transmission mechanism. The most commonly accepted mechanism in the economics literature is the one proposed by Bisin and Verdier (2001), in which parents transmit their preferences to their children as a form of 'parental altruism' (also see Nunn and Wantchekon 2011; Dohmen et al. 2012; Giuliano and Nunn 2016; Bisin and Verdier 2017; Iyigun and Rubin 2017). These preferences then

spread through the population, and the cultural and social environment in which children live determines the probability that those traits persist in equilibrium. While we cannot speak to this exact mechanism, given the simplicity of our experiment, our questionnaire does allow us to test an implication of the Bisin and Verdier model. If the villages are not in a steady state or if there is a heterogeneous distribution of preferences in the population, the family will play a role in transmitting cultural values to children (as opposed to the alternative, 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 village for multiple generations are more likely to have the cultural traits predicted in Predictions 1 and 2. To test this conjecture, the questionnaire administered after the experiment asked participants how long their families have lived in the village in question. The logic laid out above suggests that participants whose families have lived in the village longer should be more likely to act as predicted in Predictions 1 and 2. While we arbitrarily set the cut-off in Prediction 3 at whether one’s grandparents are from the village, we also test whether this prediction holds with respect to great-grandparents (results are reported in the Appendix).

**Prediction 3:** If the primary cultural transmission mechanism is intra-family and inter-generational, Predictions 1 and 2 should hold more strongly for participants whose grandparents (and previous generations) are from the village.

## 5 Results

### 5.1 Demographic Summary Statistics

Before presenting the results of the experiment, we present balance tests across the treatment and control groups on basic demographic characteristics, as gleaned from the survey administered after the experiment. The results are summarized in Table 2. Around half of the participants were female in both the treatment and control groups, with no statistically significant difference within either set of groups. Likewise, there are no statistically significant differences between the average age, education level, or religion between participants within the treatment and control groups. The average age in all three villages is in the mid-40s, around half of participants have a high school education, and an overwhelming majority are Eastern Orthodox. The only demographic characteristic that is statistically different within the treatment group is marital status. More participants in the treatment group from Udești are married (0.66) than from Știrbăt (0.53).

Next, we turn to participants’ knowledge of people from the other villages as well as the degree to which they trust people. The results are summarized in Table 3. First, we asked participants in the post-experiment survey whether they knew someone from each of the other two villages. Most people knew someone from each of the two villages, although in the treatment group, fewer participants from Udești knew someone from Știrbăt (0.71) than vice versa (0.86). We also asked participants to rate how much they trust people in each of the three villages (from 1-5, with 1 being extremely untrustworthy and 5 being extremely trustworthy; see Appendix B.4 for details). Not surprisingly, participants in the treatment group tended to find people from their own village more trustworthy.<sup>14</sup> Participants from Udești view people from Știrbăt as less trustworthy than their co-villagers while participants from Știrbăt viewed their co-villagers as more trustworthy than people from Udești. Yet, participants from Udești and Știrbăt found their co-villagers about equally trustworthy (3.81 vs. 3.74) while also finding people from the other village equally (less) trustworthy (3.62 vs. 3.54). Similarly, there are no statistical differences in the degree to which participants

<sup>14</sup>This is similar to Fershtman and Gneezy (2001), which finds that Israeli Jews have a mistrust toward men of Eastern origin.

Table 2: Summary Statistics, Demographics

Village	Female	Age	Married	High School or Above	Eastern Orthodox
<i>Treatment</i>					
Udești	0.61 (0.05) N = 100	45.28 (1.72) N = 93	0.66 (0.05) N = 99	0.53 (0.05) N = 99	0.92 (0.03) N = 98
Știrbăt	0.52 (0.05) N = 100	43.01 (2.03) N = 94	0.53 (0.05) N = 98	0.45 (0.05) N = 94	0.96 (0.02) N = 97
<i>p-values: Difference in Means</i>					
	0.200	0.331	0.073*	0.277	0.242
<i>Control</i>					
Udești	0.52 (0.05) N = 100	46.32 (1.82) N = 91	0.66 (0.05) N = 100	0.49 (0.05) N = 98	0.90 (0.03) N = 98
Poieni	0.46 (0.05) N = 100	46.13 (1.86) N = 95	0.64 (0.05) N = 99	0.52 (0.05) N = 98	0.82 (0.04) N = 100
<i>p-values: Difference in Means</i>					
	0.397	0.899	0.728	0.669	0.116
Standard errors in parentheses					
*** p < 0.01; ** p < 0.05; * p < 0.10					
p-values from Wilcoxon rank-sum (Mann-Whitney) test					

in each of the control villages trust co-villagers and outsiders. Of course, trust behavior may be endogenous to the historical institutions and cultural transmission we discussed in Section 2. Yet, as we show in Section 5.2, we are able to tease out some of the mechanisms that may lead to different levels of trust among the villages.<sup>15</sup>

## 5.2 Trust: The Send Decision

Prediction 1 indicates that, in the treatment group, participants from Știrbăt will send less tokens than participants from Udești when matched with outsiders, while there will be no difference in the tokens sent to outsiders between villages in the control group. Meanwhile, Prediction 2 indicates that the difference in the amount sent to one's co-villagers versus outsiders should be greater in Știrbăt than in Udești, while there should be no inter-village differences in the control group. To test these predictions, we compare

<sup>15</sup>We asked more questions in the survey about trust in others and unofficial payments (i.e., bribes) one has to make to secure a variety of public goods. The averages are reported in Appendix Table A1. We also asked questions on participants' financial history (i.e., borrowing and lending). The averages are reported in Appendix Table A2. In Appendix Table A3, we report the number of quiz questions participants in each village answered correctly as well as their average earnings from the experiment. These results suggest that participants in Udești may have understood the experiment a bit better than participants from Știrbăt, although participants from all three villages answered nearly 2/3 of questions correctly on average. Participants from Udești only played four rounds of the experiment, versus six rounds for participants from Poieni and Știrbăt, and thus their earnings are not directly comparable. Participants in Poieni and Știrbăt earned nearly the same amount (\$18.21 vs. \$18.34).

Table 3: Summary Statistics, Trust and Local Knowledge

Village	Know someone from other village	Trust Co-villagers (1-5)	Trust Outsiders (1-5)
<i>Treatment</i>			
Udești	0.71 (0.05) N = 99	3.81 (0.08) N = 95	3.62 (0.09) N = 95
Știrbăt	0.86 (0.03) N = 100	3.74 (0.11) N = 94	3.54 (0.10) N = 93
<i>p-values: Difference in Means</i>			
	0.009***	0.867	0.598
<i>Control</i>			
Udești	0.75 (0.04) N = 93	3.76 (0.10) N = 87	3.77 (0.09) N = 90
Poieni	0.84 (0.04) N = 100	3.61 (0.11) N = 98	3.66 (0.08) N = 99
<i>p-values: Difference in Means</i>			
	0.132	0.424	0.188

Standard errors in parentheses

\*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.10$

p-values from Wilcoxon rank-sum (Mann-Whitney) test

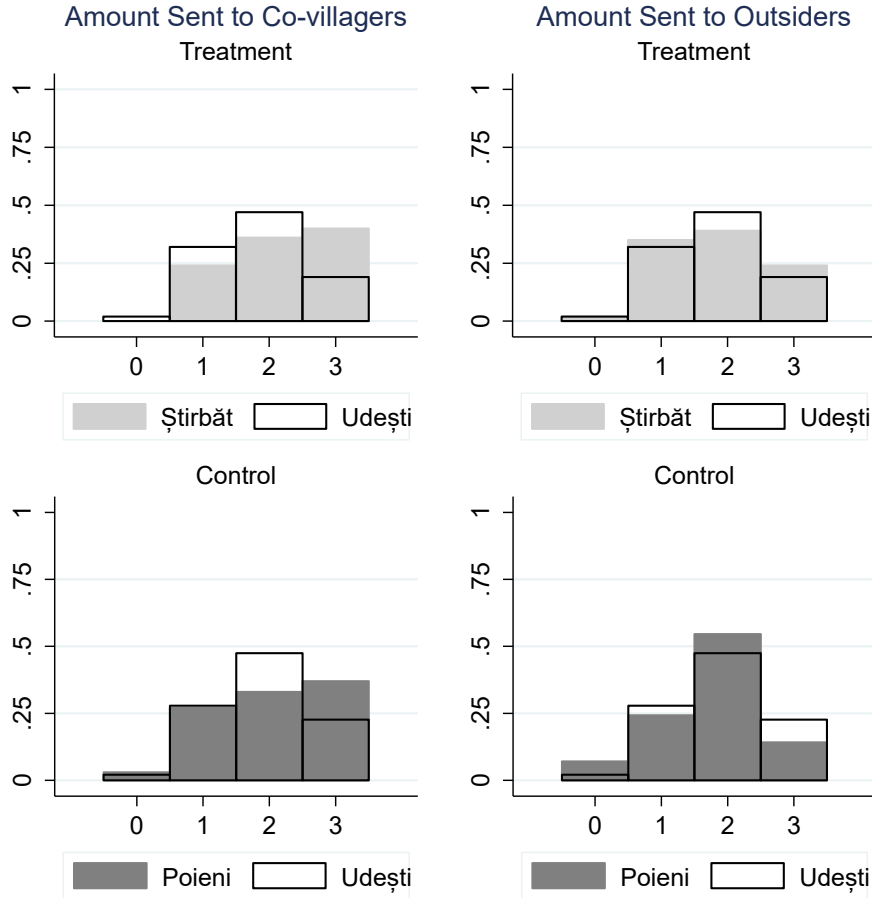
The term outsiders refers to participants from the other village with whom participants played

the amount sent to one's co-villagers and the amount sent to outsiders in the treatment and control groups. Moreover, if intra-family cultural transmission is the mechanism connecting past institutional differences with contemporary trust norms, we expect these effects to be stronger—or possibly only arise—for participants whose grandparents lived in their village (Prediction 3). Table 4 and Figures 5-6 report the results.

Figure 5 reports histograms of the send decision for participants in each village. A few observations are immediately obvious. First, in the treatment group, the distributions for participants from Udești look nearly identical for both send decisions (i.e., to co-villagers and outsiders). On the other hand, the distributions for Știrbăt appear more skewed to the right for the decision to send to one's co-villagers relative to the decision to send to outsiders. Looking across villages, the distributions for "sent to co-villagers" are more right-skewed in Știrbăt than in Udești, while the distributions for "sent to outsiders" are nearly identical. In the control group, participants from Poieni appear to send a little more to co-villagers than do those from Udești, and the distribution of the amount sent to outsiders looks similar across villages.

On the one hand, these results are consistent with Prediction 2; participants from the village on the non-Austrian side of the border (Știrbăt) appear to give more to their co-villagers relative to outsiders than do participants from the village on the Austrian side of the border (Udești). However, these histograms appear inconsistent with Prediction 1, which states that participants from Știrbăt should give less to outsiders than

Figure 5: Histograms of Amount Sent to Co-villagers and Outsiders



participants from Udești.

Figure 6 and Table 4 add nuance to the insights. Figure 6 shows the average amount sent to one's co-villagers (column 1), sent to outsiders (column 2), and the fraction of participants who sent more to their co-villagers than to outsiders (column 3). The second and third rows break down these results by whether one's grandparents are from the village or not.<sup>16</sup>

Consider first Prediction 1, which appears contradicted by the amount sent by all participants in the treatment group. There are no statistical differences in the amount sent to outsiders in Udești (1.92) relative to Știrbăt (1.85;  $p = 0.570$ ). However, participants from Știrbăt whose grandparents are from Știrbăt send *much less* to outsiders than do participants from Udești whose grandparents are from Udești (1.48 vs. 2.02;  $p = 0.006$ ). Meanwhile, there is no statistically significant difference in the amount sent to outsiders across villages among participants whose grandparents are not from the village (1.98 vs. 1.85;  $p = 0.445$ ). In the

<sup>16</sup>The incentivized results reported in Table 4 show similar patterns to the self-reported levels of trust (see Table 3) when broken down by whether or not the participant's grandparent is from the village, although the inter-village differences are not statistically significant. On a scale of 1-5, participants whose grandparents are from Udești (in the treatment group) trust of outsiders is 3.51, whereas participants whose grandparents are from Știrbăt trust of outsiders is 3.08 ( $p = 0.193$ ). These results are available upon request.

Figure 6: Average Amount Sent to Co-villagers and Outsiders

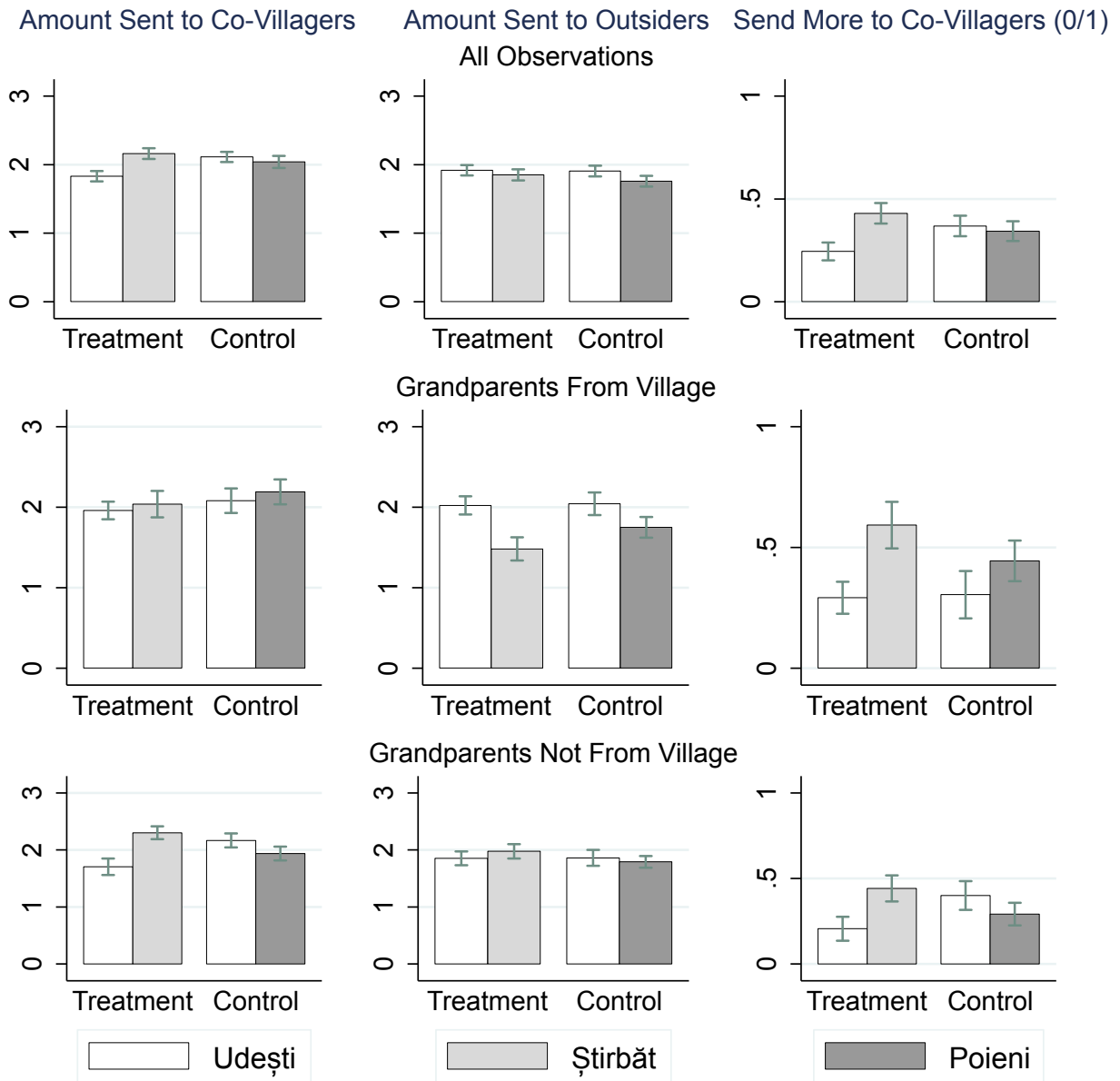


Table 4: Average Amount Sent to Co-villagers and Outsiders

	Sent to Co-villagers			Sent to Outsiders			Sent More to Co-villagers (0/1)		
	All	Grandparents from Village?	Grandparents from Village?	All	Grandparents from Village?	Grandparents from Village?	All	Yes	No
<i>Treatment</i>									
Udești	1.83	1.96	1.71	1.92	2.02	1.85	0.24	0.29	0.21
	(0.08)	(0.11)	(0.14)	(0.07)	(0.11)	(0.12)	(0.04)	(0.07)	(0.07)
N	100	49	34	98	48	34	98	48	34
Știrbăt	2.16	2.04	2.30	1.85	1.48	1.98	0.43	0.59	0.44
	(0.08)	(0.16)	(0.11)	(0.08)	(0.14)	(0.13)	(0.05)	(0.10)	(0.08)
N	100	27	43	100	27	43	100	27	43
<i>p-values: Difference in Means</i>									
	0.004***	0.686	0.002***	0.570	0.006***	0.445	0.006***	0.011**	0.031**
<i>Control</i>									
Udești	2.11	2.08	2.17	1.91	2.04	1.86	0.37	0.30	0.40
	(0.07)	(0.15)	(0.12)	(0.08)	(0.14)	(0.14)	(0.05)	(0.10)	(0.08)
N	98	25	36	97	24	36	95	23	35
Poieni	2.04	2.19	1.94	1.76	1.75	1.79	0.34	0.44	0.29
	(0.09)	(0.15)	(0.12)	(0.08)	(0.13)	(0.10)	(0.05)	(0.08)	(0.07)
N	100	48	48	99	48	48	99	48	48
<i>p-values: Difference in Means</i>									
	0.678	0.416	0.216	0.260	0.144	0.701	0.717	0.286	0.306

Standard errors in parentheses; p-values from Wilcoxon rank-sum (Mann-Whitney) test

\*\*\* p < 0.01; \*\* p < 0.05; \* p < 0.10

Sent More to Home Village = 1 if participant sent more to co-villagers than to outsiders.

Treatment group from Udești are subjects who played game with participants from Știrbăt.

Control group from Udești are subjects who played game with participants from Poieni.

control group, there is also no statistically significant difference in the amount sent to outsiders between villages, regardless of the subgroup considered. Hence, after accounting for family ties within the village, the experiment results do indeed support Predictions 1 and 3. We summarize these results as follows:

**Result 1:** In the treatment group, Știrbăt participants whose grandparents are from Știrbăt send less when playing with outsiders than do Udești participants whose grandparents are from Udești. There are no statistically significant differences in the amount sent to outsiders across the two villages for participants whose grandparents are not from the village, nor are there statistically significant differences in the amount sent to outsiders across the villages in the control group.

Prediction 2 states that the amount sent to one's co-villagers relative to the amount sent to outsiders should be greater in Știrbăt than in Udești. To test this prediction, the third column of Figure 6 reports the fraction of participants who sent more to co-villagers than to outsiders.<sup>17</sup> As suggested by Prediction

<sup>17</sup>We also analyzed the difference in the total amount sent to co-villagers and outsiders. All results are similar in terms of

2, a greater fraction of participants from the non-Austrian side of the border (Știrbăt) send more to their co-villagers than participants from the Austrian side of the border (Udești) (0.43 vs. 0.24;  $p = 0.006$ ). This is true whether or not one’s grandparents are from the village, although for different reasons. Among participants whose grandparents are not from the village, those from Știrbăt send much more to their *co-villagers* than do those from Udești (2.30 vs. 1.71;  $p = 0.002$ ). We will return to this observation shortly. Meanwhile, among participants whose grandparents are from the village, Result 1 noted that those from Știrbăt send much less to *outsiders* than do those from Udești. Finally, in the control group, the intervillage differences are statistically insignificant, as predicted by Prediction 2. These results are summarized as follows:

**Result 2:** In the treatment group, a greater fraction of Știrbăt participants send more to their co-villagers than to outsiders than do Udești participants. There are no statistically significant intervillage differences in the relative amount sent between co-villagers and outsiders in the control group.

Finally, we address a possible explanation for the finding that, among participants whose grandparents are not from the village, those from Știrbăt send much more to their co-villagers than do those from Udești. While we refrained in Section 4 from making predictions on the amount sent within the village, the intergenerational transmission framework cannot account for differences in choices made by participants whose families are relatively new to the village. One possible explanation is that newcomers selectively chose the village in which they currently reside. That is, if they chose to live in their current village because they found people in that village to be particularly trustworthy, they may send more to co-villagers than those whose families have lived there multiple generations. And, if people from Știrbăt are indeed particularly trustworthy, at least with respect to their co-villagers, this selection effect could contribute to our finding.

To address this possibility, we run ordered probit and linear probability model regressions on the amount participants sent to co-villagers and outsiders, controlling for numerous individual characteristics. Importantly, we control for whether the participant has lived in the village his or her entire life. We also control for order effects, the participant’s quiz score, and demographic controls including a gender dummy, age, age squared, marital status, a high school education dummy, and an Eastern Orthodox dummy. The results are reported in Table 5.<sup>18</sup>

The results are broadly consistent with what we find in the comparison of means. Yet, the regressions reported in columns (2) and (4) indicate that, after controlling for whether one has lived their whole life in the village, the interaction between living in Știrbăt and having a grandparent from the village is not statistically significant with respect to how much one sends to co-villagers. In other words, while we find a "Știrbăt effect"—participants from Știrbăt send more to their co-villagers than do those from Udești—this is not confined to those who do or do not have a grandparent from the village.

These results raise the question: why is there a "Știrbăt effect" in the amount sent to one’s co-villagers that transcends one’s family’s ties to the village? Such an effect would be consistent with people from Știrbăt being more *trustworthy*; i.e., more likely to return tokens to their co-villagers. We address this question in the following section by analyzing the participants’ return decisions.

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statistical significance to the results pertaining to the fraction of participants who sent more to co-villagers than to outsiders. For the sake of brevity we do not include these statistics.

<sup>18</sup>In Appendix Table A6 we include potentially endogenous regressors, i.e., those related to trust. Results are broadly similar to the ones reported in Table 5, although the coefficients of interest are more noisily estimated.



Table 5: Ordered Probit and LPM Regressions: Average Amount Sent to Co-villagers and Outsiders

Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Sent to Co-villagers</i>				<i>Sent to Outsiders</i>			
	<i>Ordered Probit</i>		<i>LPM</i>		<i>Ordered Probit</i>		<i>LPM</i>	
	<b><i>Treatment Group</i></b>							
Ştirbăt Dummy	0.52*** (0.19)	0.80*** (0.28)	0.35*** (0.13)	0.54*** (0.20)	-0.08 (0.19)	0.22 (0.28)	-0.05 (0.13)	0.15 (0.19)
Grandparents from Village Dummy		0.41 (0.28)		0.26 (0.20)		0.07 (0.28)		0.06 (0.19)
Grandparents from Village * Ştirbăt		-0.65 (0.40)		-0.43 (0.29)		-1.01** (0.40)		-0.69** (0.28)
Order: Own First	-0.51*** (0.18)	-0.42** (0.21)	-0.35*** (0.13)	-0.29** (0.15)	-0.38** (0.18)	-0.36* (0.21)	-0.26** (0.12)	-0.25* (0.14)
Know Someone From Other Village	0.34 (0.22)	0.38 (0.24)	0.22 (0.15)	0.26 (0.17)	-0.04 (0.22)	0.10 (0.23)	-0.02 (0.15)	0.07 (0.16)
Lived in Village Whole Life	-0.20 (0.18)	-0.24 (0.22)	-0.12 (0.12)	-0.13 (0.16)	-0.02 (0.17)	0.26 (0.23)	-0.02 (0.12)	0.17 (0.15)
N	179	146	179	146	178	145	178	145
Pseudo R-squared	0.06	0.07			0.03	0.07		
Adjusted R-squared			0.07	0.06			0.00	0.06
	<b><i>Control Group</i></b>							
Poieni Dummy	-0.04 (0.17)	-0.25 (0.27)	-0.04 (0.13)	-0.19 (0.20)	-0.26 (0.17)	-0.22 (0.27)	-0.17 (0.12)	-0.12 (0.19)
Grandparents from Village Dummy		-0.60* (0.35)		-0.40 (0.25)		0.06 (0.35)		0.05 (0.25)
Grandparents from Village * Poieni		0.44 (0.42)		0.29 (0.31)		-0.33 (0.42)		-0.23 (0.30)
Order: Own First	-0.04 (0.20)	0.14 (0.23)	-0.04 (0.14)	0.07 (0.17)	-0.64*** (0.20)	-0.51** (0.23)	-0.43*** (0.14)	-0.32** (0.16)
Know Someone From Other Village	0.05 (0.22)	0.03 (0.25)	0.03 (0.16)	0.01 (0.18)	0.01 (0.22)	0.00 (0.24)	0.00 (0.15)	-0.01 (0.17)
Lived in Village Whole Life	0.42** (0.18)	0.81*** (0.26)	0.31** (0.13)	0.57*** (0.18)	-0.02 (0.18)	0.28 (0.26)	-0.01 (0.13)	0.18 (0.18)
N	173	130	173	130	170	127	170	127
Pseudo R-squared	0.04	0.08			0.05	0.06		
Adjusted R-squared			0.04	0.09			0.05	0.02
QUIZ SCORE	YES	YES	YES	YES	YES	YES	YES	YES
DEMOGRAPHIC	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses; \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Quiz Score is number correct out of 6 on incentivized quiz.

Demographic characteristics are a gender dummy, age, age squared, married dummy, high school education dummy, and Eastern Orthodox dummy.

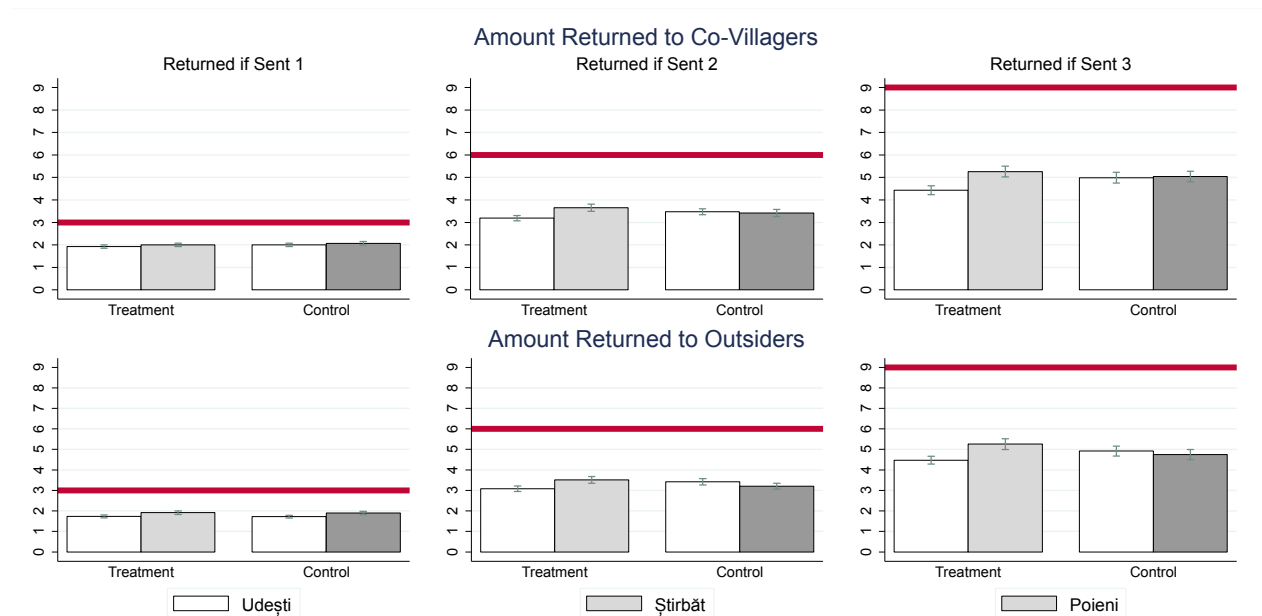
### 5.3 Trustworthiness: The Return Decision

In Section 4, we made no predictions regarding the return decision. Yet, these results may shed light on the "Știrbăt effect" from Result 2, namely that participants from Știrbăt send more to their co-villagers than do those from Udești regardless of their family history in the village. If people from Știrbăt are indeed more trustworthy (i.e., they return more conditional on the amount sent), their fellow villagers could know this and accordingly send more to their co-villagers, regardless of how long their family lived in the village. Such a choice would be rational "statistical discrimination," as discussed in Fershtman and Gneezy (2001).

To this end, we analyze the amount returned to co-villagers conditional on the sender they were matched with sending 1, 2, or 3 tokens. The results are summarized in Table 6 and Figure 7. These results indicate that the "Știrbăt effect" is indeed rational. In the treatment group, participants from Știrbăt returned more to co-villagers than those from Udești conditional on being sent 2 tokens (3.65 vs. 3.19;  $p = 0.015$ ) and conditional on being sent 3 tokens (5.26 vs. 4.43;  $p = 0.012$ ). This indicates that it is rational for participants from Știrbăt to send more to their co-villagers. Moreover, this outcome does not differ by family history. There is a statistically insignificant difference in the amount returned between people from Știrbăt whose grandparents are and are not from the village conditional on being sent 2 tokens (3.48 vs. 3.60;  $p = 0.735$ ) or 3 tokens (4.85 vs. 5.28;  $p = 0.373$ ). These results are summarized as follows:

**Result 3:** In the treatment group, participants from Știrbăt return more to co-villagers than those from Udești. There are no statistically significant inter-village differences in the amount returned to co-villagers in the control group.

Figure 7: Average Amount Returned to Co-villagers and Outsiders



Trustworthiness may also provide an explanation for why people whose grandparents are from Știrbăt send less to outsiders than people whose grandparents are from Udești (Result 1). To this end, the average

Table 6: Average Amount Returned to Co-villagers

	If Sent 1			If Sent 2			If Sent 3		
	All	Grandparents from Village? Yes	No	All	Grandparents from Village? Yes	No	All	Grandparents from Village? Yes	No
<i>Treatment</i>									
Udești	1.93 (0.08)	1.86 (0.11)	1.94 (0.14)	3.19 (0.12)	3.21 (0.18)	3.03 (0.19)	4.43 (0.20)	4.63 (0.29)	4.06 (0.34)
N	99	49	34	98	48	34	97	48	34
Știrbăt	2.00 (0.08)	1.96 (0.16)	2.05 (0.10)	3.65 (0.16)	3.48 (0.36)	3.60 (0.25)	5.26 (0.24)	4.85 (0.49)	5.28 (0.32)
N	99	27	43	98	27	42	99	27	43
<i>p-values: Difference in Means</i>									
	0.434	0.582	0.537	0.015**	0.506	0.074*	0.012**	0.750	0.012**
<i>Control</i>									
Udești	2.00 (0.07)	1.84 (0.17)	2.22 (0.11)	3.47 (0.13)	3.35 (0.25)	3.89 (0.22)	4.99 (0.24)	5.16 (0.43)	5.56 (0.43)
N	99	25	37	99	26	37	97	25	36
Poieni	2.07 (0.08)	1.92 (0.14)	2.08 (0.11)	3.42 (0.16)	3.40 (0.28)	3.35 (0.21)	5.04 (0.24)	5.09 (0.42)	5.02 (0.31)
N	99	36	48	98	35	48	98	35	48
<i>p-values: Difference in Means</i>									
	0.415	0.673	0.471	0.873	0.958	0.146	0.934	0.976	0.241

Standard errors in parentheses; p-values from Wilcoxon rank-sum (Mann-Whitney) test  
 \*\*\* p < 0.01; \*\* p < 0.05; \* p < 0.10

Treatment group from Udești played the game with participants from Știrbăt.

Control group from Udești played the game with participants from Poieni.

amounts returned to outsiders conditional on the amount sent are summarized in Table 7. The results indicate that participants from Știrbăt do indeed return more to outsiders than those from Udești conditional on being sent 2 tokens (3.52 vs. 3.08;  $p = 0.062$ ) and conditional on being sent 3 tokens (5.26 vs. 4.47;  $p = 0.020$ ). These results are driven by participants whose grandparents are *not* from the village. There is no statistically significant difference in the amount sent between the two villages among participants whose grandparents are from the village. Moreover, within Știrbăt, participants whose grandparents are from the village return less than those whose grandparents are not from the village conditional on being sent 2 tokens (2.92 vs. 3.62;  $p = 0.052$ ) or 3 tokens (4.19 vs. 5.22;  $p = 0.111$ ). Meanwhile, within Udești, participants whose grandparents are from the village return a statistically indistinguishable amount from those whose grandparents are not from the village conditional on being sent 2 tokens (3.02 vs. 3.03;  $p = 0.554$ ) or 3 tokens (4.47 vs. 4.29;  $p = 0.814$ ).

These results make it difficult to reconcile Result 1 with a purely "statistical discrimination" viewpoint. Such an explanation would require participants whose grandparents are from Udești believing that people from Știrbăt will return more to outsiders than vice-versa. Even though this is correct, this result is driven by participants whose grandparents are *not* from the village in question. Hence, while it is possible that

Table 7: Average Amount Returned to Outsiders

	If Sent 1			If Sent 2			If Sent 3		
	All	Grandparents from Village? Yes	No	All	Grandparents from Village? Yes	No	All	Grandparents from Village? Yes	No
<i>Treatment</i>									
Udești	1.73 (0.07)	1.73 (0.10)	1.74 (0.11)	3.08 (0.14)	3.02 (0.21)	3.03 (0.21)	4.47 (0.19)	4.47 (0.29)	4.29 (0.31)
N	100	49	34	99	48	34	97	47	34
Știrbăt	1.92 (0.09)	1.69 (0.15)	1.90 (0.13)	3.52 (0.16)	2.92 (0.30)	3.62 (0.25)	5.26 (0.26)	4.19 (0.50)	5.22 (0.37)
N	96	26	41	97	26	42	97	27	41
<i>p-values: Difference in Means</i>									
	0.075*	0.740	0.267	0.062*	0.674	0.119	0.020**	0.581	0.093*
<i>Control</i>									
Udești	1.72 (0.07)	1.96 (0.14)	1.70 (0.13)	3.42 (0.15)	3.88 (0.26)	3.38 (0.28)	4.92 (0.24)	5.48 (0.41)	5.03 (0.42)
N	100	26	37	99	26	37	99	25	37
Poieni	1.90 (0.08)	1.78 (0.13)	1.83 (0.12)	3.20 (0.15)	2.86 (0.22)	3.43 (0.21)	4.74 (0.25)	4.36 (0.38)	5.02 (0.36)
N	98	36	47	98	36	47	98	36	47
<i>p-values: Difference in Means</i>									
	0.079*	0.315	0.412	0.240	0.004***	0.971	0.602	0.061*	0.924

Standard errors in parentheses; p-values from Wilcoxon rank-sum (Mann-Whitney) test  
 \*\*\* p < 0.01; \*\* p < 0.05; \* p < 0.10

Treatment group from Udești played the game with participants from Știrbăt.

Control group from Udești played the game with participants from Poieni.

the presence of statistical discrimination is a reflection of cultural differences generated by the old Austrian border, the most likely explanation for Result 1 remains that trust of outsiders—rational or not—is weaker on the non-Austrian side of the border. These findings are summarized as follows:

**Result 4:** In the treatment group, participants from Știrbăt return more to outsiders than participants from Udești. This result is caused by participants whose grandparents are not from the village in question. There are no statistically significant inter-village differences in the amount returned to outsiders in the control group conditional on being sent 2 or 3 tokens.

## 6 Conclusion

This paper takes advantage of a natural experiment to shed light on whether norms derived from historical institutional settings persist in the long run. We run a "lab in the field" trust game experiment in three villages in northeastern Romania, which were on opposite sides of the old Austrian border for over a century for arbitrary, idiosyncratic reasons. The arbitrariness of the border placement in combination with the

well-known differences in Habsburg and Ottoman/Russian institutions makes this an ideal environment to test whether norms that arose due to historical institutions persist in the long run. Ottoman and Russian administrative institutions were famously rapacious and harmful to commerce, and the literature suggests this eroded trust norms in the former Ottoman/Russian lands. Meanwhile, the relatively efficient and corruption-free Habsburg administration fostered trust in government, and potentially the type of trust in "others" that helps facilitate impersonal exchange. We hypothesize that these historical institutions should have therefore fostered the emergence of different trust norms in the two regions, with people on the Austrian side of the border being more trusting of outsiders. We further hypothesize that, if trust norms are indeed passed on inter-generationally, these inter-village differences should be most apparent (and perhaps only exist) among participants whose grandparents are from the village. Their grandparents would have lived, or lived with people who lived, while the border differences existed, and thus possibly would have been imbued with these cultural attributes at an early age.

Our results confirm most of these hypotheses. Most strikingly, when participants played the game with people from a village on the opposite side of the old border, there was no difference across villages in the amount sent in the first stage of the trust game. However, focusing on the overall average masks significant heterogeneity within the village: while there were no differences in the amount sent by people whose grandparents are not from their home village, people whose grandparents grew up in the village on the Austrian side sent significantly more to outsiders than people whose grandparents grew up in the village on the non-Austrian side.

While these results permit alternative hypotheses—perhaps people whose grandparents are from this one village in northeastern Romania are just less trusting of outsiders for some reason besides cultural transmission—our methodology and the complementary literature suggest that these results are indeed reflective of the cultural transmission of norms established over a century ago. First, we chose to run the experiments in three small villages in which we had *ex ante* hypotheses for how participants in the village would act. These hypotheses are largely confirmed by the experiments. Second, the experiment was run double-blind, so the experimenters could not subconsciously affect the outcomes in favor of the proposed hypotheses. Third, the results supported the 'sub'-hypotheses that the differences would largely arise from participants whose grandparents were from the villages (admittedly, we were surprised by how strong these findings were). Fourth, these findings are consistent with a larger, though less well-identified, literature suggesting that Habsburg and Ottoman/Russian institutions had long run, still present effects on trust of inhabitants on either side of the border.

These results have implications for the role that culture can play in affecting economic outcomes and vice versa. By identifying a cultural attribute that arguably has economic and institutional antecedents, we avoid conflating the direction of causality. We also show that once a trait becomes imbued in a society's (or, in our case, village's) culture, it can remain in spite of economic and political changes which entail that the cultural trait is not necessarily a best response. Although we do not wish to push results from an experiment in one Romanian commune too far, this insight has broad implications for the role that culture plays in the evolution—or lack thereof—of economic and political institutions (also see Bisin and Verdier 2017, Iyigun and Rubin 2017). If culture is indeed as "sticky" as our results suggest, it is difficult, if not impossible, to understand the role of institutions on economic decision-making unless one also understands how a society's culture (and, possibly, its historical antecedents) interacts with institutions to incentivize behavior.

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# A Appendix: Extra Tables and Robustness Checks

## FOR ONLINE PUBLICATION

Table A1: Summary Statistics, General Trust in Others and Public Goods

Village	Can People be Trusted	Can People be Trusted prior to 1989	Unofficial Payment to Police	Unofficial Payment for Official Documents	Unofficial Payment for Education	Unofficial Payment for Medical
<i>Treatment</i>						
Udești	3.07 (0.14) N = 86	3.78 (0.13) N = 81	1.50 (0.10) N = 88	1.84 (0.13) N = 88	1.98 (0.14) N = 87	2.57 (0.15) N = 92
Știrbăt	3.08 (0.15) N = 89	3.57 (0.16) N = 70	1.47 (0.12) N = 95	1.60 (0.12) N = 92	1.71 (0.14) N = 89	2.29 (0.16) N = 94
<i>p-values: Difference in Means</i>						
	0.966	0.412	0.176	0.075*	0.022**	0.102
<i>Control</i>						
Udești	3.38 (0.15) N = 84	3.95 (0.15) N = 78	1.72 (0.13) N = 82	1.82 (0.14) N = 85	2.25 (0.17) N = 84	2.58 (0.17) N = 86
Poieni	2.82 (0.13) N = 97	3.42 (0.14) N = 85	1.26 (0.07) N = 99	1.33 (0.09) N = 99	1.44 (0.09) N = 99	2.00 (0.14) N = 96
<i>p-values: Difference in Means</i>						
	0.005***	0.005***	0.001***	0.001***	0.000***	0.007***

Standard errors in parentheses; \*\*\* p < 0.01; \*\* p < 0.05; \* p < 0.10  
p-values from Wilcoxon rank-sum (Mann-Whitney) test

Table A2: Summary Statistics, Personal Finance

Village	Have a Bank Account	Borrowed from a Co-Villager	Lent to a Co-Villager	Borrowed from an Outsider	Lent to an Outsider
	<i>Treatment</i>				
Udești	0.27 (0.04) N = 98	0.65 (0.05) N = 97	0.74 (0.04) N = 99	0.31 (0.05) N = 97	0.35 (0.05) N = 96
Știrbăt	0.28 (0.05) N = 92	0.71 (0.05) N = 97	0.77 (0.04) N = 98	0.38 (0.05) N = 99	0.46 (0.05) N = 97
	<i>p-values: Difference in Means</i>				
	0.790	0.357	0.651	0.274	0.122
	<i>Control</i>				
Udești	0.23 (0.04) N = 93	0.53 (0.05) N = 92	0.64 (0.05) N = 96	0.24 (0.04) N = 96	0.32 (0.05) N = 95
Poieni	0.26 (0.04) N = 100	0.50 (0.05) N = 100	0.63 (0.05) N = 100	0.39 (0.05) N = 100	0.47 (0.05) N = 99
	<i>p-values: Difference in Means</i>				
	0.581	0.652	0.938	0.024**	0.024**
Standard errors in parentheses; *** p < 0.01; ** p < 0.05; * p < 0.10 p-values from Wilcoxon rank-sum (Mann-Whitney) test					

Table A3: Summary Statistics, Experiment Results

Village	Quiz Questions Correct (of 6)	Total Earnings (USD)
<i>Treatment</i>		
Udești	4.58 (0.18) N = 100	13.93 (0.29) N = 100
Știrbăt	3.78 (0.14) N = 100	18.34 (0.35) N = 100
<i>p-values: Difference in Means</i>		
0.000***		—
<i>Control</i>		
Udești	4.23 (0.17) N = 100	13.05 (0.29) N = 100
Poieni	3.96 (0.19) N = 100	18.21 (0.35) N = 100
<i>p-values: Difference in Means</i>		
0.403		—

Standard errors in parentheses  
 \*\*\* p < 0.01; \*\* p < 0.05; \* p < 0.10  
 p-values from Wilcoxon rank-sum  
 (Mann-Whitney) test; Note: Earnings  
 are lower in Udești (in part) because  
 participants played two fewer rounds.  
 Earnings were paid in Romanian leu.  
 The exchange rate at the time of the  
 experiment was 4 leu : 1 USD

Table A4: Average Amount Sent to Co-villagers and Outsiders, Participants whose Great-Grandparents are not from the Village

Village	Sent to Co-villagers	Sent to Outsiders	Sent More to Co-villagers (0/1)
<i>Treatment</i>			
Udești	1.73 (0.13) N = 41	1.88 (0.11) N = 41	0.22 (0.07) N = 41
Știrbăt	2.31 (0.11) N = 48	1.92 (0.12) N = 48	0.48 (0.07) N = 48
<i>p-values: Difference in Means</i>			
	0.001***	0.714	0.011**
<i>Control</i>			
Udești	2.17 (0.11) N = 40	1.93 (0.13) N = 41	0.38 (0.08) N = 39
Poieni	1.93 (0.11) N = 61	1.74 (0.09) N = 61	0.31 (0.06) N = 61
<i>p-values: Difference in Means</i>			
	0.184	0.212	0.454

Standard errors in parentheses;

p-values from Wilcoxon rank-sum (Mann-Whitney) test

\*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.10$

Sent More to Co-villagers = 1 if participant chose to send more to co-villagers than to the outsiders.

Treatment group from Udești are subjects who played game with participants from Știrbăt; Control group from Udești are subjects who played game with participants from Poieni.

Table A5: Average Amount Sent to Co-villagers and Outsiders, Participants whose Great-Grandparents are from the Village

Village	Sent to Co-villagers	Sent to Outsiders	Sent More to Co-villagers (0/1)
<i>Treatment</i>			
Udești	1.98 (0.12) N = 42	2.02 (0.12) N = 41	0.29 (0.07) N = 41
Știrbăt	1.95 (0.18) N = 22	1.50 (0.16) N = 22	0.55 (0.11) N = 22
<i>p-values: Difference in Means</i>			
	0.904	0.012**	0.051*
<i>Control</i>			
Udești	2.05 (0.18) N = 21	1.95 (0.14) N = 19	0.32 (0.11) N = 19
Poieni	2.33 (0.18) N = 24	1.87 (0.17) N = 23	0.48 (0.11) N = 23
<i>p-values: Difference in Means</i>			
	0.165	0.801	0.292

Standard errors in parentheses;

p-values from Wilcoxon rank-sum (Mann-Whitney) test

\*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.10$

Sent More to Co-villagers = 1 if participant chose to send more to co-villagers than to the outsiders.

Treatment group from Udești are subjects who played game with participants from Știrbăt; Control group from Udești are subjects who played game with participants from Poieni.

Table A6: Ordered Probit and LPM Regressions: Average Amount Sent to Co-villagers and Outsiders, with potentially endogenous regressors

Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Sent to Co-villagers</i>				<i>Sent to Outsiders</i>			
	<i>Ordered Probit</i>		<i>LPM</i>		<i>Ordered Probit</i>		<i>LPM</i>	
<b><i>Treatment Group</i></b>								
Ştirbăt Dummy	0.61*** (0.22)	1.08*** (0.33)	0.36** (0.14)	0.64*** (0.22)	0.10 (0.22)	0.31 (0.32)	0.07 (0.15)	0.22 (0.23)
Grandparents from Village Dummy		0.56 (0.34)		0.31 (0.23)		0.00 (0.34)		0.01 (0.25)
Grandparents from Village * Ştirbăt		-0.93* (0.50)		-0.53 (0.34)		-0.73 (0.49)		-0.52 (0.36)
Order: Own First	-0.46** (0.23)	-0.46* (0.25)	-0.26* (0.15)	-0.27 (0.17)	-0.27 (0.23)	-0.32 (0.25)	-0.18 (0.16)	-0.22 (0.18)
Know Someone From Other Village	0.57** (0.28)	0.73** (0.31)	0.33* (0.18)	0.44** (0.21)	-0.04 (0.27)	0.07 (0.29)	-0.03 (0.19)	0.06 (0.22)
Lived in Village Whole Life	-0.11 (0.21)	-0.13 (0.26)	-0.07 (0.14)	-0.05 (0.18)	0.17 (0.21)	0.39 (0.26)	0.08 (0.14)	0.24 (0.19)
N	141	119	141	119	140	118	140	118
Pseudo R-squared	0.14	0.16			0.08	0.08		
Adjusted R-squared			0.12	0.11			-0.01	-0.04
<b><i>Control Group</i></b>								
Poieni Dummy	-0.05 (0.21)	-0.34 (0.34)	-0.04 (0.15)	-0.21 (0.24)	-0.32 (0.21)	-0.13 (0.34)	-0.20 (0.15)	-0.04 (0.23)
Grandparents from Village Dummy		-0.72* (0.41)		-0.43 (0.30)		-0.23 (0.42)		-0.11 (0.29)
Grandparents from Village * Poieni		0.62 (0.50)		0.34 (0.36)		-0.13 (0.50)		-0.12 (0.35)
Order: Own First	0.08 (0.23)	0.25 (0.26)	0.03 (0.16)	0.11 (0.18)	-0.56** (0.23)	-0.58** (0.25)	-0.36** (0.16)	-0.35* (0.18)
Know Someone From Other Village	-0.03 (0.26)	-0.08 (0.28)	0.00 (0.18)	-0.03 (0.20)	0.07 (0.25)	0.01 (0.27)	0.06 (0.18)	0.01 (0.19)
Lived in Village Whole Life	0.55** (0.21)	1.05*** (0.31)	0.38** (0.16)	0.67*** (0.22)	0.08 (0.21)	0.32 (0.31)	0.05 (0.15)	0.19 (0.21)
N	149	119	149	119	146	116	146	116
Pseudo R-squared	0.09	0.14			0.10	0.12		
Adjusted R-squared			0.06	0.10			0.06	0.04
QUIZ SCORE	YES	YES	YES	YES	YES	YES	YES	YES
DEMOGRAPHIC	YES	YES	YES	YES	YES	YES	YES	YES
FINANCE	YES	YES	YES	YES	YES	YES	YES	YES
PAY FOR SERVICE	YES	YES	YES	YES	YES	YES	YES	YES
TRUST	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses; \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Quiz Score is number correct out of 6 on incentivized quiz.

Demographic characteristics are a gender dummy, age, age squared, married dummy, high school education dummy, and Eastern Orthodox dummy.

Table A7: Average Amount Returned to Co-villagers and Outsiders, Participants whose Great-Grandparents are not from the Village

Village	Returned to Co-villagers if Sent 1	Returned to Co-villagers if Sent 2	Returned to Co-villagers if Sent 3	Returned to Outsiders if Sent 1	Returned to Outsiders if Sent 2	Returned to Outsiders if Sent 3
<i>Treatment</i>						
Udești	1.98 (0.12) N = 41	3.05 (0.16) N = 41	4.17 (0.30) N = 41	1.71 (0.11) N = 41	3.07 (0.20) N = 41	4.32 (0.28) N = 41
Știrbăt	2.02 (0.10) N = 48	3.55 (0.23) N = 47	5.08 (0.31) N = 48	1.89 (0.12) N = 46	3.51 (0.25) N = 47	5.11 (0.36) N = 46
<i>p-values: Difference in Means</i>						
	0.769	0.090*	0.041**	0.202	0.179	0.103
<i>Control</i>						
Udești	2.12 (0.11) N = 41	3.76 (0.20) N = 42	5.40 (0.40) N = 40	1.74 (0.12) N = 42	3.38 (0.25) N = 42	5.00 (0.39) N = 41
Poieni	2.05 (0.10) N = 61	3.42 (0.18) N = 60	5.05 (0.27) N = 60	1.86 (0.10) N = 59	3.41 (0.19) N = 59	5.05 (0.31) N = 59
<i>p-values: Difference in Means</i>						
	0.736	0.353	0.406	0.385	0.930	0.986

Standard errors in parentheses; p-values from Wilcoxon rank-sum (Mann-Whitney) test

\*\*\* p < 0.01; \*\* p < 0.05; \* p < 0.10

Treatment group from Udești are subjects who played game with participants from Știrbăt.

Control group from Udești are subjects who played game with participants from Poieni.



Table A8: Average Amount Returned to Co-villagers and Outsiders, Participants whose Great-Grandparents are from the Village

Village	Returned to Co-villagers if Sent 1	Returned to Co-villagers if Sent 2	Returned to Co-villagers if Sent 3	Returned to Outsiders if Sent 1	Returned to Outsiders if Sent 2	Returned to Outsiders if Sent 3
<i>Treatment</i>						
Udești	1.81 0.12 N = 42	3.22 0.20 N = 41	4.61 0.33 N = 41	1.76 0.11 N = 42	2.98 0.22 N = 41	4.47 0.31 N = 40
Știrbăt	2.00 0.17 N = 22	3.55 0.41 N = 22	5.18 0.56 N = 22	1.67 0.17 N = 21	3.00 0.32 N = 21	4.18 0.53 N = 22
<i>p-values: Difference in Means</i>						
	0.366	0.448	0.404	0.554	0.799	0.551
<i>Control</i>						
Udești	1.95 0.19 N = 21	3.48 0.30 N = 21	5.38 0.50 N = 21	1.95 0.16 N = 21	4.00 0.31 N = 21	5.62 0.48 N = 21
Poieni	1.91 0.18 N = 23	3.26 0.38 N = 23	5.04 0.59 N = 23	1.67 0.16 N = 24	2.63 0.24 N = 24	3.96 0.46 N = 24
<i>p-values: Difference in Means</i>						
	0.861	0.523	0.669	0.186	0.002***	0.017**

Standard errors in parentheses; p-values from Wilcoxon rank-sum (Mann-Whitney) test

\*\*\* p < 0.01; \*\* p < 0.05; \* p < 0.10

Treatment group from Udești are subjects who played game with participants from Știrbăt.

Control group from Udești are subjects who played game with participants from Poieni.

## B Appendix: Sample Instructions (in English)<sup>19</sup>

### FOR ONLINE PUBLICATION

#### B.1 Instructions: Send Decision

This is an experiment in the economics of decision-making conducted by Cult Research on behalf of researchers in the USA. The instructions are simple.

You will receive 10 lei simply for participating in the experiment. If you follow the instructions carefully, you have the potential to earn a significant amount more. A Cult Research employee will collect your decisions from the experiment, and a different Cult Research employee will calculate how much you earned during the experiment. In one week, the Cult Research employee will return and pay you the amount you earned during the experiment. Please note that if you talk to others during the experiment or exclaim out loud, you will be asked to leave and you will not be paid.

There are 200 participants taking place in the experiment from Udești. You will not be told the names of the other participants and they will not be told your name. All participants have identical instructions.

#### The Decision Situation

You will begin the experiment with 3 tokens. Each token is equivalent to **3 lei**, meaning that you start the experiment with 9 total lei.

You will be partnered with another participant from Udești. You will not know who you are partnered with when you make your decisions, and you will not find out who you were partnered with after the experiment is over. We will call this person your “partner” for the remainder of these instructions.

#### Your Decision

The Cult Research employee will give you a handout after the instructions are read. At the top of the handout are numbers from 0 to 3.

You will circle one – and *only* one – of these numbers. The number you circle is the amount of your 3 tokens you will send to the participant from Udești with whom you are matched. You can choose any number you like, but you can only choose one number. You will keep any tokens you do not send to your partner.

#### Transferring Tokens to Your Partner

Your partner will receive **3 times** the number of tokens you circled on your handout.

For example, if you choose 2 tokens, your partner will receive 6 tokens. If you choose 0 tokens, your partner will receive 0 tokens. If you choose 3 tokens, your partner will receive 9 tokens.

The following table indicates how many tokens your partner receives for each possible amount you might circle.

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<sup>19</sup>These instructions were the ones given to the participants in Udești when they played with other participants in Udești (in the order in which one played against their own village first). Instructions for the other villages were exactly the same, with only the names of the villages changed. Instructions for later rounds were similar but abbreviated.

Amount you circle	Your partner receives
0	0
1	3
2	6
3	9

**Your Partner's Decision**

Your partner will have the opportunity to return all, some, or none of the tokens you send them. They can choose to return to you anywhere between 0 tokens and the number of tokens they receive.

For example, if you choose to send your partner 2 tokens, your partner will receive 6 tokens. This means that they can choose to return to you 0, 1, 2, 3, 4, 5, or 6 tokens.

For another example, if you choose to send your partner 1 token, your partner will receive 3 tokens. This means that they can choose to return to you 0, 1, 2, or 3 tokens.

Your partner will not know how many tokens you sent them when they make their decision. Instead, they will fill out the following table. This table indicates how many tokens they will return to you for each possible number of tokens they received. Your partner will circle one number in each of the lower 3 boxes. We have circled the 0 in the first box, because if you send zero, your partner has no choice but to return 0 to you.

If your partner sends	You receive	Circle a number to return to your partner
0	0	<div style="display: flex; justify-content: space-between; width: 100%;"> <span>0</span> </div>
1	3	<div style="display: flex; justify-content: space-between; width: 100%;"> <span>0</span> <span>1</span> <span>2</span> <span>3</span> </div>
2	6	<div style="display: flex; justify-content: space-between; width: 100%;"> <span>0</span> <span>1</span> <span>2</span> <span>3</span> <span>4</span> <span>5</span> <span>6</span> </div>
3	9	<div style="display: flex; justify-content: space-between; width: 100%;"> <span>0</span> <span>1</span> <span>2</span> <span>3</span> <span>4</span> <span>5</span> <span>6</span> <span>7</span> <span>8</span> <span>9</span> </div>

**End of the Experiment**

After the experiment is over, we will look at how many tokens you sent to your partner. We will take that amount and see what your partner says he/she would return to you should you send the amount you indicated.

For example, say you choose to send 2 tokens to your partner. This is multiplied by 3, so your partner has 6 tokens. We then look to see how many tokens your partner chooses to return to you when you chose to send him/her 2 tokens.

### You and Your Partner's Income

You will **keep** each token you do not send to your partner. You will also keep all tokens that your partner returns to you. At the end of the experiment, each token will be converted to 3 lei and paid to you in cash in one week.

Your Total Income = Tokens you do not send to your partner (= 3 tokens – amount you send) + Amount returned to you by your partner

Your Partner's Total Income = 3\*Tokens you send – amount your partner returns to you

### Examples

EXAMPLE 1: Suppose that you decide to send **1 token** to your partner. This 1 token is multiplied by 3, meaning that your partner receives 3 tokens. Suppose that in the box next to 1, your partner circles 2, meaning that she will return 2 tokens to you and keep 1 token. Your total earnings are therefore  $(3 - 1) + 2 = 4$  tokens. Your partner's earnings are  $3 - 2 = 1$  token.

EXAMPLE 2: Suppose that you decide to send **3 tokens** to your partner. These 3 tokens are multiplied by 3, meaning that your partner receives 9 tokens. Suppose that in the box next to 3, your partner chooses 2, meaning that she will return 2 tokens to you and keep 7 tokens. Your total earnings are therefore  $(3 - 3) + 2 = 2$  tokens. Your partner's earnings are  $9 - 2 = 7$  tokens.

The Cult Research employee will now hand out a short quiz to test your understanding of the experiment.

### Playing the Game

You have been randomly matched with a participant from Udești. You will play this game only once. Please circle one (and only one) number on the handout that the Cult Research employee will hand to you shortly. At the end of the experiment, we will convert each of your tokens into 3 lei.

## B.2 Instructions: Return Decision

You will now participate in the same experiment you just participated in, except now your role will be reversed. Like before, there are 200 participants taking place in the experiment from Udești. You will not be told the names of the other participants and they will not be told your name. All participants have identical instructions. You will not be matched with the same person you were matched with in the previous experiment. We will briefly refresh you on the decision situation below.

### The Decision Situation

You will begin the experiment with 0 tokens. Each token is equivalent to 3 lei, meaning that you start the experiment with 0 total lei. You will be matched with another participant from Udești.

Tokens sent to you by your partner are multiplied by **three**. You will then be given the opportunity to return **none**, **some**, or **all** of the tokens your partner sent to you. You will keep any tokens you do not return to your partner.

### Your Decision

Your partner will circle the amount he/she will send to you. They can circle any number between 0 and 3.

You will receive **3 times** the number of tokens your partner circled on his/her handout. You will not know how many tokens your partner from Udești sent to you when you make your decision. Instead, you will fill out the following table. This table indicates how many tokens you will return to your partner for each possible number of tokens they sent you. You will circle one number in each of the last 3 boxes. Please note that we have already circled “0” next to the top box because that is your only option. You do not need to circle anything in this box.

If your partner sends	You receive	Circle a number to return to your partner
0	0	<div style="display: flex; align-items: center;"> <span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px; margin-right: 10px;">0</span> <span style="border: 1px solid black; flex-grow: 1; min-width: 300px;"></span> </div>
1	3	<span style="margin: 0 10px;">0</span> <span style="margin: 0 10px;">1</span> <span style="margin: 0 10px;">2</span> <span style="margin: 0 10px;">3</span>
2	6	<span style="margin: 0 10px;">0</span> <span style="margin: 0 10px;">1</span> <span style="margin: 0 10px;">2</span> <span style="margin: 0 10px;">3</span> <span style="margin: 0 10px;">4</span> <span style="margin: 0 10px;">5</span> <span style="margin: 0 10px;">6</span>
3	9	<span style="margin: 0 10px;">0</span> <span style="margin: 0 10px;">1</span> <span style="margin: 0 10px;">2</span> <span style="margin: 0 10px;">3</span> <span style="margin: 0 10px;">4</span> <span style="margin: 0 10px;">5</span> <span style="margin: 0 10px;">6</span> <span style="margin: 0 10px;">7</span> <span style="margin: 0 10px;">8</span> <span style="margin: 0 10px;">9</span>

### You and Your Partner’s Income

You will **keep** each token you do not return to your partner. At the end of the experiment, each token will be converted to 3 lei and paid to you in cash in one week.

Your Total Income = 3\*Tokens your partner sends – amount you return to your partner

Your Partner’s Total Income = Tokens he/she does not send to you (= 3 tokens – amount he/she sends) + Amount you return to him/her

### Playing the Game

You have been randomly matched with a participant from Udești. You will play this game only once. Please circle one (and only one) number in each of the three bottom boxes on the handout that the Cult Research employee will hand to you shortly (you do not need to circle a number in the first box; we have already circled 0 for you). At the end of the experiment, we will convert each of your tokens into 3 lei.

### B.3 Quiz

The 6 questions below will test your understanding of the experiment. You will be paid **0.75 leu** for each question you answer correctly. You will not be paid for incorrect answers. Please write your answer on the line provided next to each question. If we cannot read your answers, they will be counted as incorrect.

**The Situation:** Suppose that you decide to send **2 tokens** to your partner by circling the 2 on your handout as follows:



Suppose that the participant with whom you are randomly matched (your partner) fills out their handout as on the following page.

**Question 1:** How many tokens will your partner **return** to you? \_\_\_\_\_

**Question 2:** How many total tokens will you **earn**? \_\_\_\_\_

**Question 3:** How many total tokens will your partner **earn**? \_\_\_\_\_

Now, instead of assuming that you chose to send 2 tokens to your partner, assume that you chose to send **3 tokens**. Please answer the following questions, assuming that your partner fills out their handout as on the following page.

**Question 4:** How many tokens will your partner **return** to you? \_\_\_\_\_

**Question 5:** How many total tokens will you **earn**? \_\_\_\_\_

**Question 6:** How many total tokens will your partner **earn**? \_\_\_\_\_

If your partner sends	You receive	Circle a number to return to your partner
0	0	(0)
1	3	0 1 2 (3)
2	6	0 (1) 2 3 4 5 6
3	9	0 1 2 3 4 5 6 (7) 8 9

## B.4 Survey<sup>20</sup>

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? \_\_\_\_\_
  
- 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. None, or lower than grade school
  - b. Grade school or Middle school
  - c. High school
  - d. College (undergraduate)
  - e. College (graduate)
  
- 5) Have you lived in Udești your entire life?
  - a. Yes
  - b. No
  
- 6) If you answered “No” to Question 5, how long have you lived in Udești? \_\_\_\_\_
  
- 7) To your knowledge, how long has your family lived in Udești?
  - a. You moved to Udești during your lifetime
  - b. Your parents moved to Udești
  - c. Your grandparents moved to Udești
  - d. Your great-grandparents or an older generation moved to Udești
  - e. I don't know
  
- 8) What is your occupation? \_\_\_\_\_
  
- 9) What is your religion?
  - a. Eastern Orthodox
  - b. Roman Catholic
  - c. None/non-religious
  - d. Other (please list) \_\_\_\_\_
  
- 10) How often do you attend religious services?
  - a. Never
  - b. Once or twice a year (or less)
  - c. Several times a year

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<sup>20</sup>This sample survey is the one given to participants in Udești. Participants in Poieni and Știrbăt received surveys with different questions 23, 24, and 25, since they played against participants from both villages. Questions 5-7 were re-worded in Poieni and Știrbăt to reflect their home village, while questions 19-22 were re-worded to reflect the other two villages.

- d. Once a month
- e. 2-3 times a month
- f. Weekly
- g. Several times a week

11) Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please answer on a scale from 1 to 5, where 1 means that you have complete distrust in people, and 5 means that most people can be trusted.

- a) What would it be today? (please answer 1 through 5) \_\_\_\_\_
- b) And before 1989? (please answer 1 through 5) \_\_\_\_\_

12) In your opinion, how often is it necessary for people like you to have to make unofficial payments/gifts in these situations? Please answer on a scale from 1 to 5, where the scale is as follows: (Scale: Never=1, Seldom=2, Sometimes=3, Usually=4, Always=5)

- a) Interact with road police (please answer 1 through 5) \_\_\_\_\_
- b) Dealing with official documents (1 through 5) \_\_\_\_\_
- c) Receive public education (1 through 5) \_\_\_\_\_
- d) Receive medical treatment (1 through 5) \_\_\_\_\_

13) Do you have a bank account?

- a. Yes
- b. No

14) Have you ever borrowed money from someone living in Udești?

- a. Yes
- b. No

15) Have you ever lent money to someone living in Udești?

- a. Yes
- b. No

16) Have you ever borrowed money from someone living outside of Udești?

- a. Yes
- b. No

17) Have you ever lent money to someone living outside of Udești?

- a. Yes
- b. No

18) How trustworthy, in general, do you think the people of Udești are?

- a. Extremely trustworthy
- b. Somewhat trustworthy
- c. Uncertain
- d. Somewhat untrustworthy
- e. Extremely untrustworthy

19) Do you know anybody from Știrbăt?

- a. Yes
- b. No

20) How trustworthy, in general, do you think the people of Știrbăt are?

- a. Extremely trustworthy
- b. Somewhat trustworthy
- c. Uncertain



- d. Somewhat untrustworthy
  - e. Extremely untrustworthy
- 21) Do you know anybody from Poieni?
- a. Yes
  - b. No
- 22) How trustworthy, in general, do you think the people of Poieni are?
- a. Extremely trustworthy
  - b. Somewhat trustworthy
  - c. Uncertain
  - d. Somewhat untrustworthy
  - e. Extremely untrustworthy
- 23) Did you make choices differently when your partner was from Udești than when they were from Știrbăt?
- a. Yes
  - b. No
- 24) If you answered “Yes” to Question 23, why did you make your choices differently? Please answer below, and use as much space as needed.

## C Appendix: Sample Instructions (in Romanian)<sup>21</sup>

### FOR ONLINE PUBLICATION

#### C.1 Instructions: Send Decision

Aceasta este un studiu cu caracter economic despre luarea deciziilor. Acesta este condus de **Cult Research** din partea **cercetătorilor din Statele Unite ale Americii**. Instrucțiunile sunt simple.

Veți primi 10 lei doar pentru simpla participare la experiment. Dacă veți urmări instrucțiunile cu atenție, aveți posibilitatea să câștigați o sumă mai mare de bani. Unul dintre angajații Cult Research va colecta deciziile dumneavoastră cu privire la experiment, iar un alt angajat de la Cult Research va calcula cât de mult ați câștigat de-a lungul experimentului. Într-o săptămână, reprezentantul Cult Research se va întoarce și vă va oferi suma de bani pe care ați acumulat-o de-a lungul experimentului. Vă rugăm să fiți atenți la faptul că dacă veți vorbi cu ceilalți în timpul experimentului sau dacă vă veți exprima cu voce tare, veți fi rugat să părăsiți încăperea și nu veți fi plătit.

Vor fi un număr de participanți care participă la experiment din localitatea **Udești**. Nu le veți spune numele dumneavoastră celorlalți participanți la studiu și ei nu vă vor spune numele lor. Toți participanții vor avea instrucțiuni identice.

#### Situația de decizie

Veți începe experimentul cu 3 jetoane. Fiecare jeton este echivalent cu **3 lei**, acest lucru însemnând că veți începe experimentul cu un total de 9 lei.

Veți fi pus în legătură cu un alt participant din localitatea Udești. Nu veți ști cu cine ați fost pus în legătură atunci când luați deciziile și nici nu veți ști cu cine ați fost pus în legătură odată ce experimentul s-a încheiat. Îi vom spune acestei persoane că este „partenerul” dumneavoastră pentru restul acestor instrucțiuni.

#### Decizia dumneavoastră

Un angajat Cult Research vă va înmâna un suport de hârtie după ce instrucțiunile au fost citite. În partea de sus a acestuia sunt numere de la 0 la 3.

Va trebui să încercuiți unul – și doar unul - dintre aceste numere. Numărul pe care îl încercuiți reprezintă câte din cele 3 jetoane pe care le aveți decideți să i le trimiteți participantului din **Udești** cu care dumneavoastră sunteți pus în legătură. Puteți alege orice număr doriți, dar să fiți atenți să fie doar un singur număr. Veți păstra orice jeton pe care nu îl veți trimite partenerului dumneavoastră.

#### Transferul de jetoane către partenerul dumneavoastră

Partenerul dumneavoastră va primi **de 3 ori mai multe** jetoane decât ați încercuit pe suportul de hârtie.

De exemplu, dacă alegeți 2 jetoane, partenerul dumneavoastră va primi 6 jetoane. Dacă alegeți 0 jetoane, partenerul dumneavoastră va primi 0 jetoane. Dacă alegeți 3 jetoane, partenerul dumneavoastră va primi 9 de jetoane.

Taboul alăturat indică numărul de jetoane pe care îl poate primi partenerul dumneavoastră pentru fiecare sumă pe care dumneavoastră o încercuiți.

Cât încercuiți dumneavoastră	Cât primește partenerul dumneavoastră
0	0
1	3
2	6
3	9

### Decizia partenerului dumneavoastră

Partenerul dumneavoastră are oportunitatea să returneze tot, o parte sau niciunul dintre jetoanele pe care dumneavoastră i le-ați trimis. El are opțiunea să returneze orice număr de jetoane cuprins între zero și numărul de jetoane pe care îl primesc.

De exemplu, dacă alegeți să îi trimiteți partenerului dumneavoastră 2 jetoane, acesta va primi 6 jetoane. Acest lucru înseamnă că el poate alege să vă returneze 0, 1, 2, 3, 4, 5 sau 6 jetoane.

Un alt exemplu: dacă dumneavoastră alegeți să îi trimiteți partenerului dumneavoastră 1 jeton, acesta va primi 3 jetoane. Acest lucru înseamnă că el poate alege să vă returneze 0, 1, 2 sau 3 jetoane.

Partenerul dumneavoastră nu va ști câte jetoane i-ați trimis atunci când va lua propria decizie. În schimb, el va completa tabelul următor. Acest tabel arată câte jetoane vă va returna pentru fiecare număr posibil de jetoane pe care îl primește. Partenerul dumneavoastră va încercui un număr în fiecare din cele 3 căsuțe. Am încercuit noi deja 0 pentru dumneavoastră în prima căsuță, deoarece dacă trimiteți zero, partenerul dumneavoastră nu are nici o opțiune de returnare, în afară de zero.

Dacă partenerul vă trimite	Dumneavoastră veți primi	Încercuiți un număr pentru a-l returna partenerului dumneavoastră
0	0	0
1	3	0 1 2 3
2	6	0 1 2 3 4 5 6
3	9	0 1 2 3 4 5 6 7 8 9

### Sfârșitul acestui experiment

<sup>21</sup>As in Appendix B, we only provide instructions for the send and return decisions of the participants from Udești when they played with other participants from Udești. Instructions for Poieni and Știrbăt were the same, with the name of the villages changed.

După ce experimentul se încheie, ne vom uita la câte jetoane ați trimis partenerului. Vom lua acea sumă și vom vedea ce vă va returna partenerul dumneavoastră atunci când dumneavoastră îi trimiteți suma indicată.

De exemplu, să spunem că alegeți să trimiteți 2 jetoane partenerului dumneavoastră. Acestea se înmulțesc cu trei, astfel partenerului dumneavoastră îi revine 6 jetoane. Atunci, ne vom uita la câte jetoane alege partenerul dumneavoastră să vă returneze atunci când dumneavoastră alegeți să îi trimiteți 2 jetoane.

### Venitul dumneavoastră și al partenerului

**Veți păstra** fiecare jeton pe care alegeți să nu îl trimiteți partenerului. De asemenea, veți păstra toate jetoanele pe care vi le returnează partenerul. La sfârșitul experimentului, fiecare jeton va fi convertit într-un leu, iar plata se va face într-o săptămână.

**Venitul dumneavoastră total** = Jetoanele pe care nu le-ați trimis partenerului dumneavoastră (=3 jetoane – suma pe care o trimite Participantul 1) + Suma returnată de partenerul dumneavoastră.

**Venitul total al partenerului dumneavoastră** = 3\* jetoanele pe care i le-ați trimis – suma pe care partenerul decide să v-o returneze.

### Examples

EXEMPLUL 1: Să presupunem că dumneavoastră decideți să trimiteți 1 jeton partenerului dumneavoastră. Acest jeton va fi înmulțit cu 3, ceea ce înseamnă că partenerul dumneavoastră va primi 3 jetoane. Să presupunem că în căsuța alăturată numărului 1, partenerul dumneavoastră va încercui 2, ceea ce înseamnă că acesta va returna 2 jetoane și va păstra 1 jeton. Câștigul total al dumneavoastră este  $(3 - 1) + 2 = 4$  jetoane. Partenerul dumneavoastră are un câștig de  $3 - 2 = 1$  jeton.

EXEMPLUL 2: Să presupunem că dumneavoastră decideți să trimiteți 3 jetoane Participantului 2. Aceste 3 jetoane sunt înmulțite cu 3, ceea ce înseamnă că Participantul 2 va primi 9 de jetoane. Să presupunem că în căsuța alăturată numărului 3, partenerul dumneavoastră va scrie 2, ceea ce înseamnă că acesta vă va returna 2 jetoane și va păstra 7 jetoane. Câștigul dumneavoastră total este de  $(3 - 3) + 2 = 2$  jetoane. Partenerul dumneavoastră are un câștig de  $9 - 2 = 7$  jetoane.

Un reprezentant Cult Research vă va înmâna un scurt test pentru a verifica dacă dumneavoastră ați înțeles cerințele experimentului.

### Desfășurarea jocului

Ați fost pus în legătură în mod aleatoriu cu un participant la studiu din **Udești**. Vă veți juca acest joc o singură dată. Vă rugăm să încercuiți un singur număr pe suportul de hârtie pe care vi-l va înmâna un angajat de la Cult Research în scurt timp. La sfârșitul experimentului, vă vom converti fiecare jeton pe care îl aveți în 3 lei.

## C.2 Instructions: Return Decision

Acum veți participa la același experiment la care tocmai ați participat, cu excepția că rolul dumneavoastră va fi inversat. La fel ca înainte, vor participa la experiment un număr de persoane din **Udești**. Nu vi se vor spune numele celorlalți participanți și nici dumneavoastră nu veți spune celorlalți numele dumneavoastră. Toți participanții vor avea aceleași instrucțiuni. **Nu veți fi pus în legătură** cu aceeași persoană cu care ați corespondat în cadrul experimentului anterior. O să vă reamintim pe scurt în ce constă situația de decizie.

### Situația de decizie

Veți începe experimentul cu 0 jetoane. Fiecare jeton este echivalentul a **3 lei**, ceea ce înseamnă că veți începe experimentul cu un total de 0 lei. Veți fi pus în legătură cu un alt participant din **Udești**.

Jetoanele trimise de partenerul dumneavoastră vor fi multiplicat **de trei ori**. Veți putea returna **zero, câteva sau toate jetoanele** primite de la partenerul dumneavoastră. Veți păstra jetoanele pe care nu le-ați trimis partenerului.

### Decizia dumneavoastră

Partenerul dumneavoastră va încerca suma pe care el/ea decid să v-o trimită. El poate încerca orice număr cuprins între 0 și 3.

Veți primi **de 3 ori numărul** jetoanelor pe care partenerul dumneavoastră îl încercuiește în materialul lui printat. Nu veți ști câte jetoane ați primit de la partenerul dumneavoastră din **Udești** atunci când veți lua decizia. În schimb, veți completa următorul tabel. Acest tabel arată câte jetoane se vor întoarce la partenerul dumneavoastră pentru fiecare număr posibil de jetoane pe care acesta vi-l va trimite. Veți încerca un număr în fiecare dintre cele 3 căsuțe. Vă rugăm să fiți atenți la faptul că am încercuit deja 0, deoarece aceasta este singura dumneavoastră opțiune. Nu va fi nevoie să încercuiți altceva în această căsuță.

Dacă partenerul	Dumneavoastră	
vă trimite	veți primi	Încercuiți un număr pentru a-l returna partenerului dumneavoastră
0	0	<input checked="" type="text" value="0"/>
1	3	<input type="text" value="0 1 2 3"/>
2	6	<input type="text" value="0 1 2 3 4 5 6"/>
3	9	<input type="text" value="0 1 2 3 4 5 6 7 8 9"/>

### Venitul dumneavoastră și cel al partenerului

Veți păstra fiecare jeton pe care nu îl veți returna partenerului dumneavoastră. La sfârșitul experimentului fiecare jeton va fi convertit în 3 lei și veți fi plătit în numerar într-o săptămână.

Venitul dumneavoastră total =  $3 \times$  jetoanele pe care vi le trimite partenerul – suma pe care o returnați partenerului.

Venitul total al partenerului dumneavoastră = jetoanele pe care acesta nu vi le trimite (=3 jetoane - suma pe care nu v-o trimite) + suma pe care dumneavoastră o returnați.

### Desfășurarea jocului

Ați fost pus în legătură în mod aleator cu un participant din **Udești**. Vă veți juca acest joc o singură dată. Vă rugăm să încercuiți un singur număr în fiecare căsuță din materialul printat pe care vi l-a înmănat unul dintre reprezentanții Cult Research (nu va trebui să încercuiți un număr în prima căsuță; am încercuit noi deja 0 pentru dumneavoastră). La sfârșitul experimentului vom converti fiecare jeton în 3 lei.