Trust in Transitional Societies: Experimental Results from Russia.

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Abstract: To what extent do individuals trust one another in transitional societies? Does trust survive when political institutions are weak, when the potential for ethnic conflict is high and when old mechanisms for social control have disappeared? This study uses a combination of survey data and laboratory experimental methods to investigate this question. The data are unique in that the experiments were conducted in the field, the subjects in the experiments were a sub-sample of a larger, face-to-face survey of the population and the respondents were drawn from a pair of matched republics from the Russian Federation. Measures of generalized and individual trust are used, as well an experimental design that taps the willing of an individual to trust an anonymous partner (and the reciprocated level of trust). The results are correlated with confidence in political and economic institutions, inter-ethnic conflict and generational change.

Introduction.

Transitions from authoritarian rule over the past 25 years have highlighted the critical role of trust in shaping both democracy and markets. In the political realm, interpersonal trust promotes civic engagement and community-building, and institutional trust helps overcome the dilemmas of collective action [Fukuyama (1995); Putnam (2000); but see Sobel (2002)]. In economic life, trust fosters cooperation and thus facilitates impersonal exchange.

The principal claim appears to be that trust works hand-in-hand with democratic institutions. Trust appears to foster network connections [Gibson (2001)], it helps solve Common Property Resource problems [Ostrom (1990)] and it is purported to lead to economic gain [Zak and Knack (2001)]. Trust is seen to be either the glue that holds a democratic society together or else it is the lubricant that makes a democratic society smoothly function. It is little surprise that concerns with declining levels of trust in the US have sprouted a cottage industry lamenting the fact and searching for data to catalogue the imminent decline of democracy [Fukuyama (1995); Putnam (2000); Uslaner (2002)].

When turning to transitional societies the prognosis appears even bleaker. There should be little reason to expect trust among strangers. At best, if there is any trust, it will appear among limited networks composed of friends and family. However, such a form of trust remains localized and does little to foster connections across strangers. Indeed, the absence of generalized trust is thought to slow the development of democratic institutions.

In this research we ask two questions. First, is there any trust in two transitional societies? The answer is yes, we do find considerable levels of trust in strangers. This leads to the second question: what are the correlates of trust? We seek to understand what leads to trust in strangers in settings where we would not expect it.

The research focuses on two Russian Republics, Tatarstan and Sakha (Yakutia), that have experienced a transition from Soviet regimes to Republics in the Russian Federation. Taking a random sample of subjects from the population in each Republic we conducted a trust experiment. Our design allows us to control for and test a variety of effects on trust and trustworthiness. In the first section we briefly discuss the literature on trust and types of trust. In the second section a brief background is given concerning Tatarstan and Sakha. The third section details the research design and elaborates on the trust experiment. The fourth section analyzes the data from the trust experiment. The final section concludes.

Trust.

Much of the literature on trust has focused on generalized trust. This concept is based on a general willingness to trust strangers in society. Most scholars contend that credible political institutions cause generalized trust. The argument holds that trust in institutions provides stability, guarantees property rights and insures benign treatment of citizens. This in turn leads people to extend trust to strangers [see for example, Fukuyama (1995), Rose, et al. (1997), Sztompka (1999), and Levi and Stoker (2000)]. On the other hand, Jackman and Miller (1998) survey the literature on social capital and suggest that it is generalized trust that leads to trust in government. Whatever the relationship, stable political institutions are tied to generalized trust. Where those institutions are transitional then trust in strangers ought to be low.

But, there are multiple forms of trust. Perhaps at the other end of the spectrum is particularized (strategic) trust. Here dense networks of trust are at work. This form of trust is based largely on reputation and supported by kinship and gossip. When looking at Russia Gibson (2001) finds that this form of trust is the most likely. It is housed in friends and family and is limited to small networks where individuals have had repeated interactions. But, this form of particularized trust need not be confined to close friends or kin. Trust may be extended to larger groups, including those formed by religious or ethnic affiliation. Such groups define norms for behavior that support trust within the group.

It would appear that trust in strangers ought to be weak to non-existent in transitional societies, while particularized trust extending to dense networks of friends and family ought to be used more often in transitional societies. There are four reasons that we ought to expect short supply of trust in strangers. First, there are few institutional guarantees that might foster trust. Obviously there is a recursive relationship between trust and institutions (almost a chicken and egg problem) in that they are mutually supportive. If there are strong institutional guarantees that reduce the potential loss of a truster, then it is easy to trust strangers [Hardin (1993); Ruscio (1999)]. But if institutions are not considered benign, fair or can be easily invoked, then individuals have to develop beliefs about how others are likely to respond and assess the particular type of person who is being encountered. Trusting a stranger, especially in the abstract, can be costly if there is no confidence in the institutions. This ought to lead individuals in transitional societies, where confidence in institutions is low, to rely on strategic trust, rather than trust strangers.

Second, if the institutions do not provide adequate protection against strangers, then individuals have strong incentives to turn inward. Daily life requires that people have some level of trust and trusting those you know provides some protection from loss. Granovetter (1995) argues that dense social networks may serve as a substitute for institutional guarantees. Focusing on "strong" ties, such networks provide considerable reputational monitoring. The moment an actor is untrustworthy, that information is quickly broadcast within the network.[1] Kinship groups may constitute one such network.

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[1] Often those information networks are gossip networks and can be equally well ill-informed. For a discussion of gossip, its strengths and its limits, see Robin Dunbar, *Grooming, Gossip and the Evolution of Language.*, * (Cambridge, MA: Harvard University Press, 1997)..

But, this constitutes a limited network covering a relatively small number of people. A neighborhood or a workplace might constitute another dense network by which strong ties could be built among homogeneous interests. A larger network, operating in much the same vein, might rely on ethnicity. Although homogeneous, ethnic groups are often quite large and it is unlikely that the individuals know the reputation of everyone with whom they come into contact. However, Fearon and Laitin (1996) argue that ethnic identity provides a basis for ethnic trust that extends beyond "strong" ties. This is derived through a model of in-group policing and the conditions under which it is effective are fairly general. Even more interesting is the possibility that intraethnic cooperation might emerge because of the guarantees that different ethnic groups provide for the members within the group. As they note, intraethnic cooperation might quickly collapse because of asymmetries in information (especially about which signals are credible). Even so, ethnicity could provide the basis for trusting behavior if each group is regarded as having a stake in enforcing trustworthiness among its members [also see Bhavnani and Backer (2000)]. It is important to note that the kind of trust proposed by such moels is not generalized trust of strangers, but rather particularized trust in particular individuals or groups of individuals with well understood expectations about behavior.

The third reason why generalized trust might be in short supply, especially in post-communist societies, involves the scope of disruption caused by the transition from the old regime to the new. As the old institutions collapsed, they collapsed completely. The old ideology (especially in the former Soviet Union) was discredited. Not only did the old institutions abruptly disappear, but the norms tied to the old ideology and institutions no longer worked I the new society. Coupled with the collapse of the state was intense and widespread economic turmoil. This had two effects, the first of which created considerable uncertainty about the future. As Uslaner (2002) shows, optimism and trust are closely related. The second effect was economic hardship for most citizens. Several scholars have noted that in the Russian Federation this broke down old patterns of social ties. People lacked the time or resources to entertain so as to cultivate new networks and the old economy of favors (*blat*) disappeared [see Ledeneva (1998)]. All of these points contribute to individuals turning inward to friends and family, rather than outward toward trusting strangers.

The fourth reason generalized trust might be absent has more to do with the specific characteristics of the old Soviet regime. The old system bred distrust of strangers. First it established regime-based organizations that encouraged people to inform on one another. In this manner it bred distrust of strangers, leading people to concentrate their trust in people close to them. Second, the old regime implemented an irrational economic system that encouraged corruption and cheating. However, because of the possibility of being caught, cheating could only occur with people who knew one another quite well and who could be trusted to keep quiet about minor (and major) bening of the rules. This behavior was deeply etched and it is unlikely to have quickly changed.

In related work Bahry and Wilson (2004) find low levels of generalized trust in these transitional republics. These findings are consistent with those by Rose, et al. (1997), Mishler, et al. (1998) and Gibson (2001). On the other hand, we also find very

high levels of trust within one's own ethnic group and across ethnic groups. When respondents are given a bit more information concerning the individual or group to be trusted, greater trust is shown. This is also true with more particularized forms of trust. Respondents indicate a willingness to trust those in their workplace and to trust neighbors pointing to a good deal of particularized trust.

In this paper we turn to a very specific form of trust in which individuals are asked to trust strangers in their community. In essence this form of trust is halfway between generalized trust of all strangers and particularized trust of co-workers. As well, this form of trust is very concrete. Subjects in the experiment measuring trust make decisions about financial stakes.

Why Tatarstan and Sakha?

The data reported here come for a larger study. The larger study combines a face-to- face mass survey with a series of small-group bargaining games, in two multiethnic regions of Russia – Tatarstan and Sakha-Yakutia. The two regions have been the site of ethnic revivals by titular nationalities (Tatars and Yakuts) in the late 1980s and 1990s. They have also experienced over ten years of Russia's turbulent market transition, with its legacy of heightened uncertainty and growing inequality. They thus offer a particularly good setting for evaluating potential variations in strategic behavior and in norms, and heterogeneity within the population.

Our focus on Tatarstan and Sakha offers the opportunity to explore a number of differences in detail. Both regions are multiethnic, with the titular nationality and Russians comprising more than 85 percent of the population in each case. Both have also pursued a mixed or "soft" transition from central planning – with continued economic regulation, limited privatization and substantial social protections [Koroteeva (2000); Bahry ((In press))]. Their economic performance (and levels of poverty and unemployment) has typically fallen in the middle of the spectrum of Russia's 89 regions in the past 12 years [Bahry (2002)]. We would not want to suggest that they are necessarily representative of the country as a whole. But they do allow us to determine whether trust varies systematically among different groups.

We are left with a number of ways of thinking about trust in strangers. Whether it is the glue of society or its lubricant does not matter much for us. Our question is whether there is much trust in our transitional Russian Republics. Both Tatarstan and Sakha are useful laboratories for examining trust. First, there is a question of whether there is much trust in these Republics. Second, if so, what is the source? The literature seems to converge on three possible sources for trust and trustworthiness. First, trust could simply be embedded in dense social networks of friends and neighbors. As such, this form of trust survives from the old Soviet regime in which individuals had local networks on which they depended. Second, it could be that ethnicity has become the new mechanism for promoting and enforcing trust. If so, it may have the drawback of succeeding only within its own ethnic domain, leading to heighten conflict across ethnic groups. Finally it may be that norms have changed within age groups. These age

cohorts appeal to different cultural cues and symbols. This in turn provides very different signals for these groups and results in different forms of behavior. Both Republics have interesting mixes of urban and rural settlements, strong ethnic factions and weak ties to the national government.

The Trust Game

At a simple level trust can be thought of as a two-person sequential game with complete information. The first mover (the truster) must decide to whether to give some thing of value to the second mover (the recipient). What is given increases in value and at the second move the recipient must decide how much (if anything) to return to the truster. For example, suppose a truster has $10 and decides to pass it on to a recipient. Further suppose the amount passed is tripled, so the recipient now has $30 and has to decide how much to return. Trust pays if it is reciprocated. Any amount returned greater than $10 means that trust is worthwhile. The problem, however, for the truster is knowing whether the recipient is trustworthy. Absent any credible signal about the intention of the recipient, the truster is better off not passing anything to the recipient (indeed, this is the subgame-perfect equilibrium this type of game).

This manner of thinking of trust has all of the standard characteristics of a trust relationship. The truster chooses to make herself vulnerable with respect to the trustee. If the trustee proves to be trustworthy, then both parties are left better off. Absent trust (or trustworthiness) one or both parties are left worse off. Beyond this narrow dyadic relationship, others point out that widespread trust among strangers reduces transaction costs for even simple relationships [see the general review by Levi and Stoker (2000)].

This version of the "trust game" has been widely studied in the laboratory. Most experimental designs are based on some variation of Berg, et al. (1995) in which subjects are split into two groups. Trusters are given some amount of money ($10 in the case of Berg, et al. (1995)) and they are told they will be matched randomly with a recipient. The truster can pass any amount of the money to a third party who will triple whatever amount is passed. That amount will be handed to the recipient. The recipient then decides how much to remove from the envelope and the envelope is returned to the truster. The structure is similar to that described above for a trust game and the sub-game perfect equilibrium is for the first mover (the truster) to not send anything. Yet as Berg, et al. (1995) find, 30 out of 32 of their subjects passed money (on average $5.16 was passed out of the $10.00 they held). By the same token they find it resulted in an average return of $4.66.

Others have run similar trust games using a number of different experimental conditions. In several recent studies, the amount sent in this game has proved to be a useful measure of trust and reciprocity, and has been shown to vary with the characteristics of the player and the game context [Bolle (1998); Croson and Buchan (1999); Glaeser, et al. (2000); Burnham, et al. (2000); Bohnet, et al. (2001); Scharlemann, et al. (2001)]. As well, an edited volume by and Ostrom and Walker (2003) contains

considerable research focused on trust and reciprocity. These studies produce similar findings. There is widespread trust and considerable trustworthiness.

Not all of the work has focused on the United States and Western Europe. Several papers have now turned to cross cultural comparisons of trust. For example, Yamagishi, et al. (1998) compare different levels of trust between Japanese and U.S. citizens (see also Hayashi, et al. (1999)). There they find some cultural differences across trust. Koford (2001) compares individuals in Bulgaria with those in the United States and finds somewhat higher levels of trust. Fershtman and Gneezy (2001) look at trust across different ethnic groups in Israel and find high levels of trust that are mediated by stereotypes. An ambitious study by Buchan, et al. (2002) compares levels of trust across four countries, Japan, Korea, China and the United States. They find that trust varies with cultural rules for social distance.

The research detailed here is a combination of the projects described by Fershtman and Gneezy (2001) and Buchan, et al. (2002). In this research we focus on ethnic groups within regions. We also are concerned with comparisons across regions. While we are not looking at different countries (both Tatarstan and Sakha are members of the Russian Federation), we are looking at regions that are markedly different from one another. Separated by six time zones, there are enormous differences between Tatarstan and Sakha in terms of land size, population, religion and income.

Research Design

Sample Structure and Recruitment.

Our data come from a combination of a survey and laboratory experiments conducted in Tatarstan and Sakha in the summer and fall of 2002. The two-hour, face-to-face survey covered a number of issues ranging from work to social relations and ethnic identification to trust. The questionnaire was developed in English and Russian with collaborators from Demoscope in Moscow, and then translated into Tatar and Yakut. The Tatar and Yakut versions were subsequently blind-back translated to insure linguistic equivalence. Wherever possible, respondents were interviewed by same-nationality, bi-lingual interviewers, and could opt to give the interview in either the titular language or in Russian. The eligible population included non-institutionalized permanent residents eighteen years of age and older.

The stratified, random sample was designed to achieve two goals – to allow comparisons between the titular nationality and Russians in each republic, and to allow inferences about the populations of each republic as a whole. However, comparisons across ethnic groups could be complicated by the fact that the two groups were unevenly distributed, with Tatars and Russians making up around 50 and 43 percent of Tatarstan's population, respectively, and with Yakuts and Russians accounting for approximately 40 and 45 percent in Sakha. The survey thus included an oversample of the underrepresented nationality in each case.

A total of 2572 people were interviewed, 1266 in Tatarstan and 1306 in Sakha. Response rates were 81 and 72 percent, respectively. Ten percent of completed questionnaires were chosen for inspection of interviewers' work by independent evaluators from Moscow, although these inspections were not typically conducted in very small villages.

A unique feature of this research design is that a subset of the survey respondents were re-contacted and then brought together to participate in controlled laboratory experiments a few weeks later. Travel and resource constraints meant that we could only visit a limited number of locations to conduct the experiments. We thus included the capital city and another major city in each republic, some smaller towns, and some villages within a day's driving distance of the cities/towns. We did not, however, go to villages where fewer than 20 individuals had been surveyed.

At the end of the face-to-face interview, interviewers invited all survey respondents in the given locations to participate in the experiments. They then contacted respondents again a short time before the experiments to set a date for them to participate. Respondents who agreed to participate received a 30-ruble fee at that time, and then another 120-ruble "showup fee" when they arrived at an experimental session.

A total of 42 experimental sessions (20 in Tatarstan, 22 in Sakha-Yakutia) were conducted in May – July 2002.[2] An additional five were conducted in Yakutsk six weeks later. A total of 650 subjects participated, with 254 from Tatarstan and 396 from Sakha.[3] Each session lasted approximately two hours. Sessions averaged 13.8 subjects (ranging from a low of 7 to a maximum of 23).[4] The average payoff was 540 rubles in Tatarstan and 558 rubles in Sakha (between $17.40 and $18.10 US). These payoffs were substantial by local standards, reflecting a week's wage or more for 62% of our subjects.

Facilities and Set-up.

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[2] The final sessions were delayed due to difficulties in locating respondents during mid-summer, when many people were on vacation or away at their dachas.

[3] Here, however, we exclude 75 subjects from the analysis. Of these, 61 were participants in the experiment who did not fall in the original sample, and 14 were in-sample participants in one problematic session. Out-of-sample subjects were typically family members or friends of respondents in the sample, who came to play in their stead. Others were participants recruited by interviewers during the final three sessions, in order to insure sufficient group size to run each session. (We typically cancelled sessions when fewer than 8 subjects showed up to participate, and asked those who did show up to come back at a later time – and most did. As our sessions were ending, we could not ask in-sample respondents to return, and so supplemented the number of players in the last few sessions.) All but six of the out-of-sample subjects were subsequently contacted and interviewed. The six non-interviews either could not be located or refused to be interviewed. Finally, respondents in the problematic session were excluded due to possible contamination by two local interviewers.

[4] As a rule we ran a session only when at least eight subjects were available. When fewer people showed up for a session, we cancelled it and invited them back to a later session. Also, a few subjects were turned away from sessions where the available space was too small to accommodate them, and were invited back at a later time.

The experimental sessions were typically held in schools or public libraries. Facilities varied a great deal in terms of room size and amenities, but subjects typically sat at tables with sufficient space for their tasks. All were given cardboard boxes to use as "screens" so that their decisions (allocating money and completing forms) could be kept confidential from other participants. To preserve confidentiality, each subject was assigned a number as he or she arrived for the session, so that no names would appear on any experimental materials.

A single local experimenter conducted all sessions within a republic.[5] Both experimenters were female and were fluent in both Russian and the titular language. Experimenters ran each session by reading from a standard script in Russian, and demonstrated each task physically with the relevant sums of cash, envelopes and forms. In villages composed of the titular ethnic group, experimenters conducted sessions in the titular language. In all sessions, experimenters offered a brief explanation of the project and then fielded questions from subjects. Subjects then filled out a 1-page questionnaire on their basic demographic characteristics.

The experiment included eight games. The first five were variants of the dictator game; the latter three included a trust, an ultimatum and a risk game.[6] In the first two dictator games, subjects were given 8 ten-ruble notes, 8 pieces of similarly sized blank paper, and two envelopes. They were then asked to allocate the money and slips of paper between themselves a counterpart not in the room.[7] The next two games reversed the procedure. Subjects were given envelopes from other people (again, not in the room) with some sender characteristics listed on the outside. Respondents were then asked to guess how much money the sender had left in the envelope. In the fifth variant of the dictator game, subjects were given two envelopes from other people, each with a picture of the sender on it. Subjects were asked to choose one of the two envelopes and then guess how much money the sender had left in it.[8]

Subjects then played the trust game with other participants in the experimental session. Details of that experiment are detailed below. Once the trust game was completed, subjects participated in an ultimatum game [for details on this, see Bahry and

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[5] In each session one of the authors served as coordinator seated outside the room, organizing the distribution of forms and payouts as the games progressed. The other author served as observer to note questions and issues that arose in the course of the session. A fourth member of the team served as an assistant in handing out/collecting forms and envelopes and answering subjects' questions that arose as they completed various tasks.

[6] Ideally, the order of the games would have been randomized. But this was impossible to carry out in the field. The experimenters were instructed to stick with the script and they did so. It is very likely that the order of the games affected the behavior of subjects. However, because all subjects faced the same order, then any between-subject variation must be due to differences in subject characteristics. Because we have a detailed survey instrument for each subject, we have substantial information about individual characteristics.

[7] In the first treatment they were told their counterpart was someone in the same republic. In the second treatment they were told their counterpart was someone in a different region. In both instances what they allocated was passed on to participants in subsequent sessions.

[8] In each of the latter three dictator games, subjects kept the envelopes sealed until the end of the session. Their responses in subsequent decisions were thus not affected by what they received in these games.

Wilson (2004)] At the end of the experimental session subjects completed an individual decision task that measured their risk orientation.

Trust Game.

When beginning the trust game subjects were informed that they were no longer making decisions about some unknown other person. Instead they were making decisions with the other people in the room. They were told that they would be randomly matched with another person, that they would not know who that person was and that person would not know them. All matching was by ID numbers and because everyone's ID was hidden, no one knew their counterpart.

The trust game was a variant of Berg, et al. (1995). Subjects were randomly assigned to as either first movers or second movers. This was accomplished by subjects drawing poker chips from a hat. Subjects drawing a blue chip were assigned as first movers and those drawing white chips were second movers. Subjects were told to make their draw and keep their chip hidden from view. This made it difficult for subjects to figure out with whom they might be paired. Once subjects drew their chips they were given oral instructions and asked to listen very carefully. We wanted subjects to understand what both parties to the decision would be doing. Following the instructions the materials were passed out. First movers (blue chip subjects) were given an envelope marked "send," 8 ten ruble notes and 8 blank slips of paper. Second movers were given an envelope marked "send" (and with the number 9999 written in the upper left corner of the envelope) and 16 blank slips of paper.

First movers were told that they had to put 8 objects in the send envelope. Any money put in the send envelope was tripled and given to their randomly assigned counterpart. Subjects were given several examples: the extremes (putting nothing in the envelope and putting everything in the envelope) and putting either 2 or 6 bills in the envelope. For each example subjects were asked to state the amounts that would be sent to the second mover.

Once the instructions for the first movers were read, instructions for the second movers were read. Second movers were told that they would receive envelopes from a first mover (a blue chip person) and that they would then have to decide how much to put into their own "keep" envelope and how much to leave in the "send" envelope. Whatever they put in the "send" envelope would be returned to the first mover.

The materials were handed out and an abbreviated version of the instructions was given. First movers and second movers alike were told to take their materials and work in their box out of view of those around them. Both groups were asked to write their ID number in the upper right hand corner of their send envelope and then count the number of items handed them. This made it more difficult for subjects to figure out who had blue chips and who had white chips as each group had the same number of objects. Both the groups were told to put 8 items in the "send" envelope. The envelopes were then collected and given to the second author. While not exactly a "double-blind" experiment,

he was usually stationed in the hallway and could not identify the subjects. He recorded the amount that was sent by first movers (using their ID number) and tripled it.

While the data were being recorded, subjects were given forms to fill out. The first movers were asked to write down how much they put in the send envelope, they were asked to triple that amount and they were asked to predict how much would be returned to them by the second mover. Second movers were given a form asking how much they expected the first mover to send them.

Once the data were recorded the contents were tripled and the envelopes were shuffled and handed back to the second movers.[9] It was at this point that the random pairing between subjects occurred. At the same time the envelopes from the second movers were handed to the first movers. Again, this was designed to keep subjects uncertain about who was which kind of player in this game.

Once the materials were handed out, both the first and second movers were asked to write their ID number in the lower right corner of the envelope and then to take the contents out of their envelopes. The first movers were asked to count the number of blank slips that were returned to them and make certain to put 8 slips of paper into the envelope. The second movers were then asked to decide how much money they would keep and how much they would return to their counterpart. Once everyone made up their mind, the envelopes were collected. These envelopes were handed to the second author who then recorded how much was returned (and with whom the subject was paired).

When all the data were recorded, the envelopes were sealed and returned to the subjects. The subject IDs in the upper right corner indicated to whom the envelope would be returned. This portion of the task ordinarily took 20 minutes.

Analysis

We now turn to analyzing the data from the trust experiment. The first part of the analysis points out that there is considerable trust, as measured by the experiment. At the same time there is considerable heterogeneity in how much others are trusted. We also find considerable trustworthiness – those who are trusted return somewhat more than they were sent. Once these results are developed, we then turn to multivariate models in order to explain the heterogeneity in decisions to trust and to reciprocate that trust.

Aggregate Findings.

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[9] When an odd number of subjects turned up for the experiment the group could not be split into an even number of first and second movers. The smaller number was assigned as first movers and the remainder as second movers. One of the first movers was randomly chosen, the envelope and its contents duplicated, and given to two of the second movers.

Overall we find considerable trusting behavior. Over 60 percent of the subjects trusted their counterpart with half or more of their endowment (see Table 1).[10] This is well above what would be expected if subjects were playing the sub-game perfect equilibrium. In fact, only 9 of 273 subjects refused to send anything to their counterpart. What was sent by these subjects correspond to what was observed in the data by Berg et al. (1995).

Table 1
Percentage of first movers passing the amount (in rubles). Frequencies in parentheses.

Rubles	Overall	Tatarstan Only	Sakha Only
0	3.30 (9)	4.67 (5)	2.41 (54
10	3.30 (9)	5.61 (96	1.81 (3)
20	12.82 (35)	16.82 (18)	10.24 (17)
30	17.95 (49)	21.50 (23)	15.66 (26)
40	34.07 (93)	35.51 (38)	33.13 (55)
50	8.42 (23)	6.54 (7)	9.64 (16)
60	6.23 (17)	3.74 (4)	7.83 (13)
70	1.83 (5)	1.87 (2)	1.81 (3)
80	12.09 (33)	3.74 (4)	17.47 (29)
Total Number	273	107	166

There are differences between the regions in terms of what was passed. In particular those in Tatarstan are less likely to pass rubles to their counterparts than those in Sakha. Nonparametric tests between the distributions in both places confirm this (Kruskal-Wallis c2 = 16.47, d.f.=1, p<.001; Wilcoxon z=4.17, p<.001).

Absent trust, no matter what amount is passed, nothing should be returned. Yet only 14 subjects out of 292 returned nothing. By comparison 8 subjects returned everything that was sent to them (including one young female Yakut who was sent the entire 80 rubles and returned all 240 rubles). Trust pays off with first movers sending 40.8 rubles, on average, and second movers returning 48.7 rubles. Because the amount that subjects' return is a function of what is sent, it is easier to talk about the percentage of what was returned. Figure 1 is a histogram of what was returned to the first mover. From these data it is apparent that two decision rules predominated (explaining almost half of the decisions): either return exactly what was sent (resulting in the spike at .33) or

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[10] In 28 of the sessions there were an odd number of subjects. As noted earlier, in these instances one first mover was paired twice. Table 1 reports the data for first movers excluding the duplicate data.

to return half of what was sent (the other spike at .5). Subjects, then, prove trustworthy and we find no evidence that the two regions vary in terms of the levels of trustworthiness (t=.087, p=.86)

Figure 1
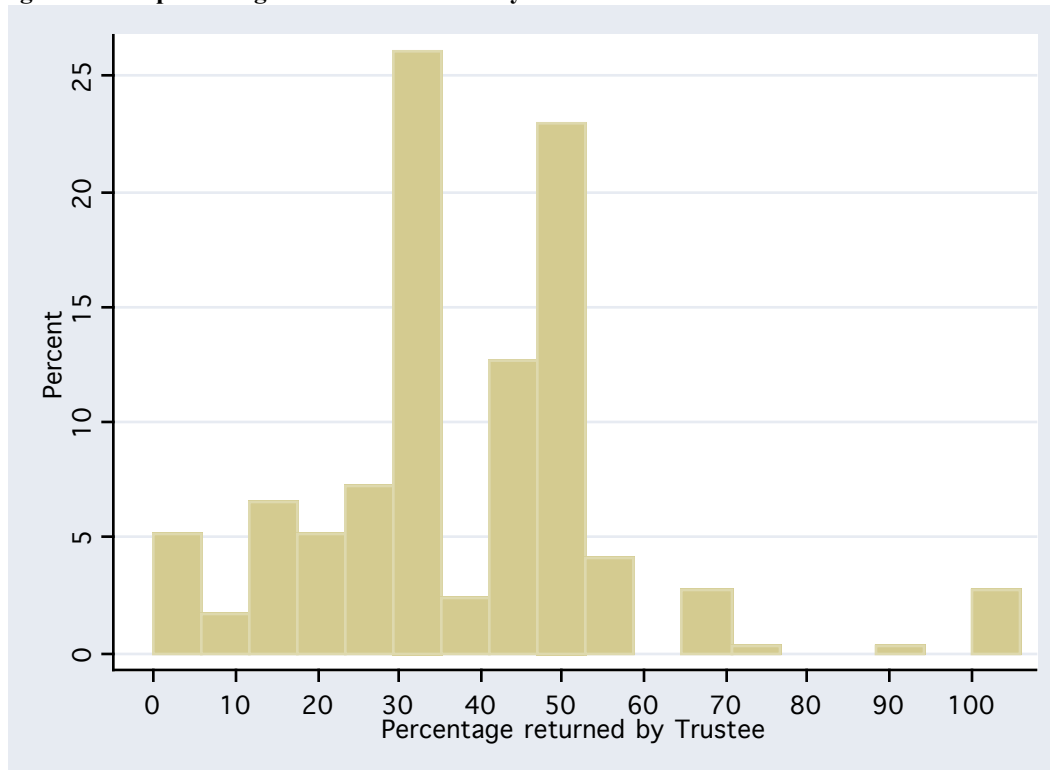**Histogram of the percentage of rubles returned by second movers.**

Figure 2 plots the earnings by subject pairs. The payoffs to the truster are on the horizontal axis and the payoffs to the trustee are on the vertical axis. The payoff pairs are represented by diamonds and have been jittered in order to give some sense of the density. The vertices to the triangle define the maximal payoffs to the subjects. The vertex at (80,0) represents instances in which the first mover kept all 80 rubles and sent nothing to the second mover. The upper left vertex, (0,240) represents the case in which the first mover sent all 80 rubles, the tripled amount was kept by the second mover and the truster received nothing in return. The final vertex displays the instance in which all 80 rubles were sent and the tripled amount was fully returned. The interior of the triangle represents all of the possible combinations of payoffs, although in this experiment subjects could only send and return multiples of 10 rubles.

Also plotted on the figure are three lines representing different divisions of the money. The vertical line starting from the (80,0) vertex is the break-even line for the truster. Any allocations to the left of that line indicate that the truster was left worse off. Allocations on that line indicate that the truster ended up where she started. The middle line is the "split the total return" line. Points on this line indicate that the trustee simply splits the total return in half. So if a truster keeps 40 rubles then the other 40 rubles are

tripled to 120 and the second mover splits the total return in half, keeping 60 rubles. This leaves the truster with 100 rubles (the 60 that were returned and the 40 that was kept). Finally there is a more complicated calculation in which the earnings on what the truster sent are split. Again, if the truster sends 40 rubles, then 80 rubles are earned through such an "investment." If this is split in half, the trustee earns 40 rubles and the truster earns 120 rubles (40 rubles that was kept, 40 rubles that was invested and 40 rubles which was half the earnings).

As can be seen from the figure a variety of strategies were employed. Quite often trust did not pay (outcomes to the left of the vertical "break even" line). A mass of outcomes form on the break even line, indicating that trusters were being returned exactly what they sent (with trustees taking the full profit from the investment). Another mass of outcomes are located between the break even line and that splitting the difference. A handful of outcomes lie off to the right of the line that splits the total return. What is clear from this figure is that there is considerable heterogeneity in strategy pairs.

Figure 2. Overall payoffs for the subject pairs. Truster payoffs on the horizontal axis and trustee payoffs on the vertical axis.
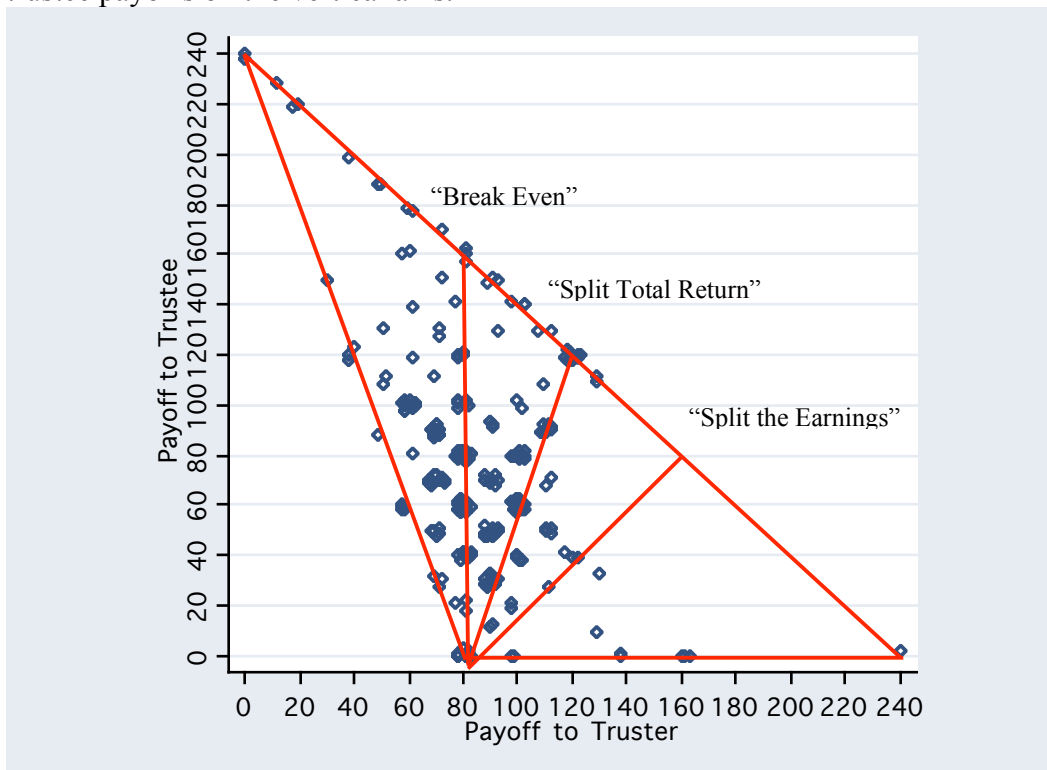
We find that there is considerable trust and trustworthiness in both Republics. We now turn to understanding whether that trust is systematically related to characteristics about the subjects.

Multivariate Models

The first models are concerned with the amounts passed by the trusters to the trustees. We argue that this measures a subject's willingness to trust a stranger. We use the amount sent by the subject in the envelope. We assume that the more that is sent the more trusting the first mover.[11] OLS is used in the estimates because the measure is naturally scaled from 0 to 80, although constrained to 10 unit increments. Although the data are "lumpy" (see Table 1) we find no problems in our estimates. We obtain similar findings if ordered-logit is used on the nine different allocations.

We estimate two different models. The first includes a full set of variables that tap various predictors for the heterogeneity we observe in the trust data. The second model reduces this set of variables.

We include a number of independent variables to test various conjectures about trusting behavior. These are given in table 2 along with various descriptive distributional statistics. In previous work we have found a strong effect for age [Bahry and Wilson (2004)]. The middle cohort of subjects, those who grew up under the Soviet state in the 1950s and 1960s, tend to adopt a strong norm of fairness. Those who are older also tend to be poorer and tend to be less fair. The younger cohort tends to behave in a more self-interested fashion, when it is possible to get away with it. Ledeneva (1998) argues that the younger cohort is far different than their middle aged or older counterparts. She contends that they no longer even understand the concept of *blat*, a system of reciprocal exchange that predominated in the old Soviet regime [Ledeneva (1998), p. 175]. To capture this curvilinear effect, we not only include a measure of the age of subjects, but also an age-squared term.

The second variable accounts for the difference between Republics. We have already noted that subjects in Sakha tend to send more than their counterparts in Tatarstan. This may be that those in Sakha are more trusting, it may be an intercept effect due to differences in the cost of living between the two Republics (because of transportation costs and higher wages, the cost of living is about 30 percent higher in Sakha), or it may be that Sakha is more "Soviet." It is less integrated into the rest of the world, it still lives on monopoly rents from one product (diamonds) and it still receives tremendous subsidies from Moscow.

The third variable is a dummy variable measuring whether or not the subject is Russian. In both Republics Russians are a large group (they exceed Yakuts in Sakha and nearly match the percentage of Tatars in Tatarstan). In other work we point out that Russians and the titular groups have powerful stereotypes about one another [Bahry and Wilson (2004)]. Russians tend to feel that their opportunities are constrained in both

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[11] Several different specifications were tried for the dependent variable. One created a three level measure in which subjects sent less than half, sent exactly half or sent more than half of the amount given them. We thought these cut-points constituted divisions between untrusting behavior (sending little), fair behavior (sending exactly half) or trusting behavior (sending more than half). All of the estimates were run on this measure and we found that the ordered-logit estimates were in line with the OLS estimates reported on the full measure reported in the tables.

Republics. We expect this measure to capture one component of inter-ethnic competition. A fourth variable also taps inter-ethnic competition by measuring the percentage of other subjects in the experiment who matched the subject's ethnicity. Although we were unable to match subjects across ethnicity/nationalism, we were able to vary the ethnic mix of various experimental sessions. Because Russians, Tatars and Yakuts have different phenotypic characteristics, it was easy for a subject to glance around the room and determine the group composition. In turn this meant that the subject could guess how likely it was that it was that she was paired with some of the same ethnicity. There is considerable variation in this measure across the experimental sessions.

The fifth variable is a measure of past play. The experiment could not be conducted using a counter-balanced design or a randomized block design. Consequently we expect there are some ordering effects in the experiment. We also think that behavior in the first two dictator games is indicative of a subject's sense of fairness. In the first game subjects were asked to split 80 rubles between themselves and an unknown person in the same Republic. In the second dictator game they were asked to split 80 rubles between themselves and an unknown person in a different Republic. We create a measure of the number of times the subject sent 40 or more rubles. The variable ranges from 0 to 2.

The sixth variable measures the subject's sense of economic well being by asking about employment. The measure is a simple dummy variable, taking on a value of one if the subject is unemployed, has recently been laid off or has not been paid. Because of uncertainties about employment and job prospects, this measure summarizes economic concerns and views about the future.[12]

The seventh measure is a dummy variable for the gender of the subject. There are several points to note concerning this variable. First, our subjects are largely female. This is not unusual for research in Russia. Women are more likely to respond to surveys and we suspect they were more likely to turn out for this experiment. Second, among the late middle-aged and elderly populations, women outnumber men due to high mortality rates among the latter. Finally, there is a good deal of interest in whether there are differences between men and women. Croson and Buchan (1999) find that women reciprocate more than men in trust games but that there is no difference between the two in the decision to trust. Chaudhuri and Gangadharan (2002) obtain the same finding with respect to reciprocity, but by contrast they find that men are more likely to trust than women. Scharlemann, et al. (2001) also find that males are more likely to be trusting, but only when paired with females. We test the impact of gender on the decision to trust.

The eighth variable focuses on the idea of local connectedness. This is in line with conjectures by Putnam that those who are more connected with their neighborhood

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[12] Several attitudinal questions were asked in the survey concerning future employment prospects, the state of the economy and satisfaction with material standards. All are highly correlated with this measure. In addition we asked about household income. However, because of the number of subjects who declined to respond, we lose too many observations to include this measure.

are more likely to trust. However, it is not clear that this should be the relationship. Granovetter (1985) argues that local connections might be limited to dense networks and in turn encourage trust among those in the group. Gibson (2001) makes the same case for Russia, arguing that most of the trust that he finds is limited to narrow connections among friends. This sense of local connection is measured by asking subjects with whom they would leave the key to their home or from whom they would borrow money if there was an emergency. For each question, subjects were asked specifically about neighbors, co-workers, friends and others (excluding relatives and close family). The numbers were summed and scaled and low values are interpreted as having few community connections.

The ninth variable looks at the educational level of the subject. Uslaner (2002) suggests that educational levels are associated with generalized trust. The argument is that those with more education are more tolerant and willing to generalize trust to others. This measure is coded along three categories, ranging from less than a high school education, a high school graduate or a college/technical school graduate.

The tenth variable is the standard measure of generalized trust. It asks whether people in general can be trusted. This item is identical to that used in the General Social Survey, the World Values Study, the National Election Study and it has been used by Gibson (2001) in his research on Russia. We use three categories for this measure, with a low score equal to "you can't be too careful" in dealing with other people, the middle category equal to those who think that it depends and the high category being those who respond that most people can be trusted. Presumably behavior in the trust game ought to be correlated with the response to this attitudinal item. However, many, including Glaeser, et al. (2000), have found that there is no correlation between this measure and behavior in the trust game. On the other hand Glaeser, et al. (2000) do find a relationship between the generalized trust measure and trustworthiness.

The final variable treats the question of risk. Often the decision to trust is considered to be a decision about the willingness of a subject to risk being exploited. We then measure the individual's risk orientation by developing a scale of four attitudinal items that involve socially risky activities: whether the subject is will to travel to strange locations, try new, but unknown goods, meet new people or take a new job that might have a high salary, but might also disappear. When scaled, a low value indicates someone who is risk averse in these social behaviors.[13]

Table 2. Descriptive Statistics of Independent Variables for First Mover

	Mean	Std. Deviation	Minimum	Maximum
Age (years)	42.53	15.15	19	83
Proportion Russian	.37	--	--	--
Proportion Female	.67	--	--	--

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[13] Several of these questions are similar to Zuckerman's items Marvin Zuckerman, *Behavioral Expression and Biosocial Bases of Sensation Seeking* (New York: Cambridge University Press, 1994). that define a full risk battery. Due to space limits in the survey we could not include the complete battery.

Fair choices in prior decisions	1.07	.87	0	2
Level of Education (3 levels)	2.14	.52	1	3
Proportion unemployed/unpaid	41.40	--	--	--
Generalized Trust	1.58	.82	1	3
Risk Attitudes (scale)	1.60	.49	1	2.75
Local Connectedness (scale)	.53	.29	0	1
Expectations about amount returned (percentage)	56.77	39.74	0	240
Percentage in group with same ethnicity	65.92	26.76	0	100
Earnings	84.50	25.29	0	240

Trust estimates.

Table 3 provides estimates for two models. The first contains all of the variables noted above. The dependent variable is the amount sent by the truster to the trustee. Our discussion begins with the variables that are not correlated with the decision to trust. We find that the decision to trust is not related to the subject's risk attitudes. This finding is similar to that noted by Eckel and Wilson (2003) in which it was found that this form of a trust decision is not related to a wide variety of risk measures. It does not appear to be the case that deciding how much to send one's counterpart is related to an individual's risk orientation.[14]

We do not find that generalized trust is related to the decision to send money to a stranger. This is not an unusual finding. Glaeser, et al. (2000) find that the measure of generalized trust is unrelated to the trust decision in this experimental design; instead it is related to the decision to reciprocate. At the same time we do not find that the level of education is related to the decision to trust.

We find no support for the idea that ethnic composition matters. That is, subjects do not rely on information about the ethnicity of others in their group when deciding how much to send. This is not to say that ethnicity is irrelevant. Subjects who are Russian send significantly less than Tatars or Yakuts. The decision, however, is independent of the ethnicity of others. This calls into question the idea that ethnicity provides a credible signal of trustworthiness in these transitional Republics.

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[14] In analysis not reported here we also used measures derived from the gambling decisions conducted at the end of the experiment. None of these measures predict the trust decision.

Likewise we find no support for the idea that trusting strangers is related to one's local connections. Whether or not a subject is embedded in the local neighborhood is unrelated to whether they decide to trust. While Russians may rely heavily on dense networks of friends and acquaintances, it does not affect the way in which they trust strangers. Our variables of ethnic composition and local connections have the property of also accounting for differences between urban areas and villages. The villages were the most ethnically homogeneous and villagers were the most likely to leave a key or borrow money from a network of local friends. That these variables were not significant indicates that local villages were no more trusting than other places. When including variables for the size of the community, we did not find an effect.

Model two removes these variables that are uncorrelated with the decision to trust. We now focus on the subset of variables that are related to the decision to trust strangers. First, we find that age is curvilinear. The younger and older subjects send less, while the middle-agers send more. This corresponds well with the finding reported by Bahry and Wilson (2004) for the ultimatum game. The middle-age subjects hold very strong norms about equality and it shows up in the trust game.

We also find that significantly more is sent to the second mover in Sakha. Likewise, as already mentioned, Russians are likely to send significantly less. Those in Sakha likely have a different view of the amounts that were being used in the experiment – due to the cost of living difference between Tatarstan and Sakha. As noted, the Slavic Russians regard themselves as a put upon minority in both Republics. There is some evidence from studies in the US pointing out that minorities who feel discriminated against are less likely to trust.

The strongest predictor is one's past behavior. This is not surprising in that the dictator games that preceded the trust game are a measure of fairness. As a consequence they measure the individual's propensity toward fairness. While this variable has a strong effect, it does not swamp all of the other independent variables. As such we cannot conclude that most subjects were simply using a simple heuristic of adopting a "sending" strategy that they stuck with throughout the experiment. Instead we find that there is still a fair amount of heterogeneity in subject's choices.[15]

Finally, we find weak effects for job prospects and for being female. Those who are unemployed, who have recently experienced a layoff or have not been paid, are likely to send less. This we interpret as both a pocket book issue as well as optimism about the economic future. We also find that females are less likely to trust strangers, although here too the effect is weak. This corresponds to the finding by Scharlemann, et al. (2001) in which females were found to be less trusting than men.

Table 3. OLS estimates for the amount (in rubles) sent by a Truster to a Trustee.

	Model 1	Model 2

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[15] Among trusters, 22.7 percent chose the same strategy in the first two dictator games and in the trust game. A little over half of that group always chose to split the amount evenly. Excluding those who always played the same strategy does not affect the substantive interpretation of our models.

Intercept	11.56	16.02*
Age	.89**	.93**
Age Squared	-.01**	-.01**
Sakha	9.82***	10.02***
Russian	-5.11**	-5.34**
Fair choices in prior decisons	7.59***	7.72***
Employment Problems	-3.87	-4.01*
Female	-3.92*	-3.82*
Local Connectedness (scale)	3.15	
Percentage in group with same ethnicity	.01	
Education	.73	
Generalized Trust	-1.05	
Risk Attitudes (scale)	1.64	
R2	.22	.23
N	272	273

Note: *p<.10; **p<.05; ***p<.001

We find a number of individual characteristics matter for this decision to trust. Because age appears so important in our estimates, we look more closely at the effect of age. One approach is to look at the beliefs of the subjects. After subjects made their decision about how much to send, they were asked how much they expected to be returned to them. While beliefs and actions are correlated (ρ=.87), there is substantial variation in subject's expectations. This creates problems for building a simple measure of expectations across subjects because different amounts were sent and whatever was sent was tripled. A subject sending 20 rubles could expect, at a maximum, only 60 rubles, while a subject sending 80 rubles could expect a maximum of 240 rubles.[16] The dependent measure we use is the percentage of the tripled amount that first movers expect will be returned. This controls for the size the amount sent. On average first movers expected to get 42.33 percent of the tripled amount (with a standard deviation of 20.21).

Instead of looking at age as a continuous variable, we estimate separate models for each age cohort. The manner in which we break subjects into different cohorts captures different generational experiences. The youngest cohort includes those born in 1971 and later and is composed of individuals who came of age during the period of Glastnost and the dismantling of the Soviet regime. The second cohort was born between 1941 and 1970. This middle aged cohort grew up during the post-World War II period and came of age during the height of the Soviet regime. The older cohort included

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[16] Four subjects incorrectly filled out their predictions. In two of the cases subjects sent nothing, but claimed that they had and calculated their expectations. In the remaining two cases it appears that subjects included in their prediction the amount that they kept plus some division by the counterpart. However, we cannot be certain this is the case. All four observations are dropped from this analysis.

mostly retired individuals and the World War II generation. While we tried a number of different specifications, the same set of regressors came to the fore (see Table 4). Comparing intercepts across the three models, it is clear that the younger cohort has very low expectations for what is returned. On average, controlling for a variety of independent variables, they expect a little over 26 percent return on the tripled amount. Anything less than 33 percent means that trust does not pay. The older cohort is a little more optimistic about how much will be returned, anticipating a little over a third will be returned. The middle-age cohort is the most optimistic, anticipating more than half of what was sent and tripled will be returned.

For the younger cohort none of the independent variables has much of an impact. Being in Sakha or Tatarstan makes no appreciable difference. Being Russian leads to slightly higher expectations, those this coefficient is not statistically significant. Prior fair behavior is significant, but weakly so. Those who have behaved most fairly in the past expect to at least get back more than they sent. Neither generalized trust nor risk orientation matters. Basically the younger cohort has very low expectations. Consequently it is little wonder that they send little.

The middle-age cohort is quite different. Generally they hold very high expectations about what will be returned. Those in Sakha expect more than their counterparts in Tatarstan. Being a Russian dampens expectations by almost 11 percent. This, however, is offset by fairness in the dictator games. We find that generalized trust has a weak, negative effect on expectations. So, if the subject believes that people can be trusted most of the time, the lower their expectations. Likewise we find a weak, negative effect for the subjects' risk orientation.

By comparison being Russian matters for the older cohort, with such individuals expecting much less. As with their middle-age counterparts, this is offset by past behavior in the dictator games. Given the small number of elderly subjects it is unwise to read too much into these estimates. However, it is clear that the expectations of the elderly are lower than the middle-aged subjects and closer to the youngest cohort.

Table 4. OLS estimates of truster expectations by age cohort.

	Model 1 Young Cohort	Model 2 Middle Cohort	Model 3 Old Cohort
Intercept	26.16***	55.03***	36.01***
Sakha	2.47	7.48**	2.98
Russian	6.25	-10.94***	-16.57***
Fair in Dictator Games	4.08*	4.56**	13.54***
Generalized Trust	-.61	-3.38*	-3.14
Risk Attitudes	2.36	-6.37*	-.85
R2	.02	.12	.36
N	84	148	97

Note: *p<.10; **p<.05; ***p<.001

Generally we observe a good deal of trust in this experiment. In many ways, we find a surprising amount of trust for a society that is usually characterized as made up of disconnected dense networks that depend on friends and family. Subjects are willing to trust strangers. The root cause of this trust is not derived from ethnic composition. Russians, as a group, tend to trust others at a lower rate – but this is independent of the make-up of their group. Some experiments were run with nearly all Russian groups and they trusted at the same lower rates as Russians in other groups.

It is also the case that generalized trust, risk attitudes and the degree to which the subject is embedded in the community do not affect the extent to which a trust move is made. Past behavior matters a great deal. However, our measure of past behavior we interpret as an individual disposition toward fairness. Not surprisingly, the more fair the subject was in previous decisions, the more likely the subject will send money to a stranger. What also makes a difference is the age of the subject. As we note, age cohorts have very different expectations for what will be returned if they make a trust move. We think that these generational differences provide an important insight into transition.

Reciprocity

Now that we have estimated the trusters, we turn to trustees. What affects their decision to return money to the first movers?

The dependent variable is the percentage returned by the second mover. Because trusters send different amounts we use a common metric by which to compare what was returned. It is calculated by taking the amount returned divided by the tripled amount sent and creating a percentage. Models are estimated only for those subjects who received something from their counterpart.

We start with many of the independent variables from our estimates of the trusters. This includes the age of the subject (as well as an age-squared term), a dummy variable for the Republic, a dummy variable for Russians, a measure of past fair behavior, whether the subject was female, the percentage of co-ethnics in the group and attitudinal measures concerning job problems, local connectedness, education, risk and generalized trust. The descriptive statistics for these variables are given in Table 5. Two additional variables are added. Before seeing what the first mover sent, subjects were asked how much they expected would be sent.[17] Optimistic expectations should be positively related to the amount that is returned. However, expectations should not be all that matters. Whether expectations are met should also make a difference [see Eckel and Wilson (2004)]. The second measure is the difference between what was actually sent minus the subject's own expectations. This measure is negative if subjects have high expectations but they are not met. They can also go positive if expectations are exceeded. So, if subjects have high expectations that are not met they may "punish" their counterpart by not returning as much. In 33.6 percent of the cases subjects had higher

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[17] The measure used is the amount sent by the first mover, rather than the tripled amount. On the form subjects had a column listing the amount sent by the first mover and the corresponding tripled amount.

expectations. Or, expectations might be exceeded (this happened 45.5 percent of the time) and subjects might reward their counterpart.

Table 5. Descriptive Statistics of Independent Variables for Second Mover

	Mean	Std. Deviation	Minimum	Maximum
Age (years)	43.47	15.28	19	83
Proportion Russian	.39	--	--	--
Proportion Female	.68	--	--	--
Fair choices in prior decisions	1.09	.85	0	2
Level of Education (3 levels)	2.10	.54	1	3
Generalized Trust	1.51	.78	1	3
Risk Attitudes (scale)	1.60	.45	1	3
Local Connectedness (scale)	.51	.30	0	1
Proportion unemployed/unpaid	43.38	--	--	--
Percentage in group with same ethnicity	64.85	27.17	0	100
Expectations about amount sent (rubles)	37.51	18.67	0	80
Difference in what was passed and what was expected	5.00	25.48	-70	70
Earnings	75.99	44.19	0	240
% in group same ethnicity	64.85	27.16	0	100

The first model, given in Table 6, includes all of the variables noted above. On average the model shows that trust pays off. The intercept term indicates that 36.45 percent of what was sent was returned to the truster (which is above the 33.3 percent needed to get something additional back from what was sent). We find that there is no relationship between age and the amount reciprocated, at least from this estimate. Likewise we find no difference between subjects from Sakha and Tatarstan in what is returned. We also do not find that females return more which is contrary to other findings in the trust game [see Croson and Buchan (1999) and Chaudhuri and Gangadharan (2002)]. As in the truster estimates, educational levels do not matter. While there is a negative sign on the coefficient reflecting problems attendant to employment, indicating that less is returned, the coefficient is weak and not significantly different from zero. Likewise, there is no effect due to being more connected in the local neighborhood.

We find that Russians return less than their titular counterparts. This is consistent with our earlier finding that Russians also send less. We also find that those with risk

seeking attitudes (as measured by our scale) return less. This finding is echoed in work on trust and risk [see Eckel and Wilson (2003)]. Not too surprisingly, we find that those who are fair in dictator games also tend to return more in the trust game. This stands to reason in that the second mover's position in the trust game is similar to the dictator game. In both cases the recipient of the division is unable to respond to the actions of the trustee. The difference, however, is that the trustee in the trust game has received something from the truster, which might affect the trustee's reply. The effect uncovered here is quite strong. Beliefs that subjects have concerning how much they will receive are also quite important. The more that is expected, the more that is returned. What does not happen is that trusters are not "punished" (nor are they rewarded) for miss-matched expectations. The variable accounting for the difference between what was sent and what was expected is zero.

Oddly we find a negative relationship between what is returned and the percentage of co-ethnics in the group. In trying other models we do not find that this is a function of all-Russian experimental sessions. Instead, this happens with regularity in all groups. This leads us to believe that heterogeneity in the groups leads to a higher rate of return.

These estimates, while seemingly unrelated to age, mask interesting relationships that interact with age. In order to illustrate these, we separate the subjects into three age cohorts, much as we did with the trust decisions. The next three models from Table 6 reflect estimates for each cohort. A number of independent variables are dropped from these estimates – largely because they have no impact on the estimates and because they gain us some leverage where we have a limited number of degrees of freedom.

Table 6. OLS estimates for the percentage of the tripled amount returned to the truster by the trustee.

	Model 1	Youngsters	Middle	Oldsters
Intercept	36.45***	28.72***	45.72***	45.14**
Age	.03	--	--	--
Age Square	.0002	--	--	--
Sakha	-.25	--	--	--
Russian	-3.81*	3.29	-8.72***	-.19
Fair in Dictator	8.43***	9.05***	8.05***	9.00**
Percentage in group with same ethnicity	-.105***	-.03	-.12**	-.15
Generalized Trust	1.74	3.41*	1.22	2.42
Risk Attitudes (scale)	-6.25***	-10.98***	-5.80**	-5.79
Expectations	.15**	.33**	.05	.003
Difference: Received minus expected	.03	.13	-.05	.03
Job Problems	-1.98	--	--	--
Local	1.62	--	--	--

Connectedness				
Education	.43	--	--	--
Female	.27	--	--	--
R2	.21	.31	.21	.06
N	285	87	165	38

Note: *p<.10; **p<.05; ***p<.001

When running the estimates in this fashion we find important differences, particularly between the younger and middle-aged cohorts. First, among the younger cohort, the rate of return is below 33.3 percent, on average. What matters for these individuals is fairness in the dictator game, risk attitudes and expectations. These all vary in the same direction as in model 1. Being Russian does not matter and neither does the ethnic mix of the group. Generalized trust has a positive, significant, effect much like the findings reported by Glaeser, et al. (2000).

For the middle-aged cohort prior fairness in the dictator game predicts what will be returned. Being Russian is also a very strong negative predictor. Likewise one's risk attitudes are negatively correlated with the rate of return. In marked contrast to the younger cohort, the ethnic makeup of the group matters, while expectations do not. It is also the case that generalized trust does not matter for the middle-aged cohort.

When turning to the older cohort there is little that predicts the rate of return. In large part this is because of a small number of subjects and a great deal of variability. The only effect that is clear has to do with prior fair behavior. As with all of the other subjects, it positively predicts the rate of return.

By looking at the age cohorts we find that expectations and generalized trust are important for the young. By contrast, being Russian and the ethnic composition of experimental group matters for the middle-aged cohort. From these estimates it appears that both groups are attentive to quite different things when deciding how much to return to their partner. It is still the case that past fairness behavior makes a difference for both and so too does risk orientation of the subject. But, the differences between the two groups point to differences in how the decision task is approached. Rather than paying attention to who else is in the group or not being part of the titular group, the younger subjects pay attention to how they're treated. Likewise the generalized trust measure predicts their trustworthiness. The middle-aged cohort seems to move to a default rule of returning half of what they receive. Their expectations have no impact on what is returned.

Fairness.

A recurring finding throughout is that prior behavior in the dictator game predicts behavior in the trust game. This is true for both the decision to trust and the decision to reciprocate. One way to interpret this concept of fairness is to consider it as a norm. It is a common value that sets expectations for behavior [see discussions by Ferejohn (1991)

and Chwe (2001)]. Clearly this norm is an important predictor for both trusters and trustees. However, the question is whether this norm is in decline. We suspect that generational differences are leading to a decrease in adherence to a norm of fairness. Among the young there is little sense that strangers need to be treated fairly. Among the elderly there is a sense of entitlement that has been heightened because of the transition from the old economic system to the new. This group has lost the most. Only the middle-aged group has a stake in the old norm of equality.

We look at our "fairness" measure and estimate several models to see what predicts it. The dependent variable has three categories, the lowest being those subjects who never sent 40 or more rubles in the initial two dictator games. The middle category includes those who sent 40 ore more rubles in one of the dictator games. The highest category includes those who sent 40 or more in both of the dictator games. Independent variables include the age of the subject, a dummy variable for the Republic, whether the subject was Russian, a measure of the subject's gender and whether the subject experienced problems with employment.

The models are estimated using ordered logit. All the subjects, trusters and trustees, are pooled. Because the dictator game decisions were made prior to the trust decisions, it makes no sense to account for the different positions held by the subjects in the trust game. The first model supports the claim that there are strong generational differences in adhering to a fairness norm. The relationship is an inverted U with the middle aged the most likely to be fair. It is also the case that those in Sakha are more likely to adhere to a fairness norm. This is in line with the idea that Sakha is more disconnected from other economies and continues to hand on to old Soviet norms. The economy is also an important consideration, with those experiencing unemployment, layoffs or non-payment of wages, being less likely to be fair. Being Russian or female does not make a difference in the model.

Model 2 adds the question for generalized trust. That variable does not predict fairness. Nor does it affect the importance of age, the Republic or employment. The third model adds another economic variable. In the survey subjects were asked whether they would prefer normal standard of living or whether they would prefer freedom. The variable is coded as a dummy variable with 1 being a guaranteed standard of living. This variable has a negative effect on fairness, illustrating that economic considerations remain important. Because of missing values for this measure (subjects failing to respond to the item) the sample size is decreased by more than 10 percent. Even so, the remaining coefficients retain their strength and sign.

What we find here is that age, place and economic disruption matter for the likelihood that one adheres to a norm of fairness. This norm is not merely agreement with a general statement, but rather an observation about behavior. The middle-aged cohort is the most likely to behave fairly. This is enhanced by living in Sakha, a Republic that is far removed from the rest of Russia and is little connected with the world economy. Adherence to a fairness norm is undermined by employment problems and a desire for a predictable income.

Table 7. Ordinal Logit on fairness in first two dictator games.

	Model 1	Model 2	Model 3
Age	.13***	.13***	.15***
Age squared	-.001***	-.001***	-.001***
Sakha	.47***	.49***	.45**
Russian	-.11	-.12	-.07
Female	-.02	-.02	.18
Unemployment	-.68***	-.67***	-.75***
Generalized Trust		.11	
Prefer normal living standard over freedom			-.19**
Bo1	2.05***	2.22***	2.18***
Bo2	3.23***	3.40***	3.40***
R2	.08	.08	.12
F	39.45***(6)	40.70***	51.10***
N	531	529	471

Note: *p<.10; **p<.05; ***p<.001

Discussion

Contrary to expectations we find considerable trust in strangers using an experiment that measures trust. The experiment replicates the findings by many others. Although there should be little trust in this circumstance, because the truster is made vulnerable by sending money to a stranger, nonetheless trusters are trusting. It turns out that trust pays off, because more is returned to the truster than is sent (on average). When running this experiment among student populations, this is a common finding. Our data are doubly interesting in that we find considerable trust among a heterogeneous population sample. Moreover, we find considerable trust in transitional societies where we would expect very little trust. In a purely descriptive sense these results are valuable.

The results from the experiment fly in the face of research that finds levels of generalized trust are quite low in transitional societies. Within the same population we also find that levels of generalized trust, as measured using the standard GSS measure, are quite low [Bahry and Wilson (2004)]. One of the puzzles we present pertains to what is being measured? The generalized trust measure asks a very broad question about trust. When that question is increasingly particularized (whether one might trust co-workers or neighbors) then levels of trust increase. The experiment randomly matched people who were usually strangers. In the experiment people do not have to trust "all-or-nothing," but rather they could vary the extent to which they trust another. We find substantial

heterogeneity in the extent to which trusters trusted. Even so, this form of trusting strangers is uncorrelated with the standard measure of generalized trust.

It may be that the experiment elicits very specific guarantees for subjects. After all the experiment is a surrogate "institution" in the sense that it provides very clear rules for both the truster and the trustee. The rules are clear and there is common knowledge about how the institution works. Moreover, there is a third party (the experimenter) who will clearly enforce those rules. As such, in a transitional society with few fixed institutions, this experiment may serve as one. The experiment itself may elicit the trusting behavior. Even if this is true, we still find a great deal of heterogeneity in the amount of trust and this can be used to determine the underlying sources of trust.

What we do not find when estimating the correlates of trust behavior speaks volumes. First, we do not find that ethnicity makes a difference for the decision to trust. This is surprising given the degree to which ethnicity permeates discussions of transitional societies. As old institutions collapse and leave a political vacuum, ethnic cleavages are often used to define new political arrangements. Certain in the cases of Tatarstan and Sakha, nationalist movements built along ethnic lines, came to the fore. Titular languages were given equal status, educational institutions focused on ethnic culture and history and nationalist movements became politically powerful. Yet we find little evidence that ethnicity is used as a marker when deciding whether to trust. The proportion of co-ethnics had no effect on how much an individual trusted. Whether or not one was Russian, however, does matter. Russians send less. However, we interpret this less as a response to an ethnic signal than to a view held by Russians that everyone treats them poorly. When we looked at interaction terms between Russians and ethnic composition, we find nothing that suggests ethnic cleavages.

The second non-finding is that local embeddedness does not affect levels of trust. While most of the literature on transitional societies emphasizes strong ties between friends and family as producing the basis of trust, we do not find that this helps us explain trust among strangers.

What is correlated with the trust decision is equally interesting. Foremost we find that there is a strong curvilinear relationship with age. The youngest are likely to trust the least while the middle-aged are likely to trust the most. We repeatedly find this effect of age and we return to a discussion of it below. We also find that there are significant differences between Tatarstan and Sakha. Less is usually sent in the former than in the latter. It may be that those in Sakha are less connected with the global economy and continue to be rooted in the Soviet system. If so, those in Sakha could be more committed to old norms that stressed equality. As noted above we also find that Russians are much less likely to trust. This seems to be due to the fact that they regard themselves as a put upon minority – even though they dominate in Sakha.

We also find that past behavior in two tasks that measure fairness predict what subjects will send in the trust game. It is little surprise to find that past behavior predicts future behavior. However, being fair in a dictator game is different from trusting.

Consequently we view this measure as tapping a behavioral norm. We discuss this point below.

Not only do we find considerable trusting behavior, but we also find that subjects tend to be trustworthy. Given the structure of this game, there is no reason for a subject to return anything to a stranger. There was no subsequent move that the truster could take that affected the trustee. Of course, there is substantial heterogeneity in what is returned. Some subjects who received everything (the tripled 80 rubles) kept it all; other returned everything. Usually, however, subjects returned something, allocating the sum between the truster and themselves.

At first blush there seems little that predicts trustworthiness. Certainly past behavior in the dictator game predicts what a subject returns. Here the link between the dictator game and the trust game is the closest. But, despite the similarity between the two decision tasks, the truster's action is thought to create an obligation for the trustee – something that is missing in the dictator game. Again, we think that there is a norm in operation that is described by the dictator game. We also find that the risk attitude of subjects is negatively correlated with trust behavior. This is an odd finding, pointing out that those who are most risk seeking are likely to be the least reciprocating.

What seems to be missing from models predicting trustworthiness is age. However, under further analysis we find that age interacts with a number of variables and in a way that highlights different ways in which the age cohorts approach the task. Foremost there are differences between the younger and middle-age cohorts with respect to ethnicity and expectations. The younger cohort is much more guided by their prior expectations about what will be sent. For the middle-aged cohort their expectations do not matter. Instead the percentage of group that is the same ethnicity makes a difference and that coefficient is negative. As well, middle-aged Russians send less than their Titular counterparts. Both have a powerful affect and indicate that these two groups attend to very different pieces of information when deciding what to reciprocate. There is little that predicts the behavior of the oldest cohort.

This effect of age is persistent. In large part we think that there are generational differences that affect the ways in which subjects think of the trust experiment. The key to this point involves understanding the norms applied by the different generations. Under the old Soviet system equality was stressed. In a system where most had little, sharing was a common means for dealing with scarcity. Equal shares constituted a norm understood by all. However, as the old system collapsed, such a norm was no longer useful. In the new economy, those newly entering the job market discovered that equality mattered less and was not useful in building networks. The elderly, who were removed from job prospects, whose retirement stipends were devalued or disappeared and who were unable to obtain services that were previously provided for free, no longer felt norms of equality were beneficial.

We think that behavior in the dictator games gives us insight into the norm of equality. Using a simple measure of whether or not subjects send half or more of their

money to unknown strangers in two dictator games, we then looked at whether there were differences in the age cohorts. As we expected, those who are middle-aged are much more likely to abide by a norm of fairness than are either the younger cohort or the older cohort. Other things matter as well, but it seems clear that the different generations have quite different attachments to the older Soviet norm of equality.

We started out by wondering whether states in transition can support trust in strangers. We found that trust in strangers can exist absent ethnic edicts or in the face of dense networks of friends and family. This could sound a note of optimism that humans are able to build trust even when there are few institutional guarantees backing that trust. On the other hand, there is some reason for pessimism. Much of trust may be rooted in adherence to norms that encourage individuals to be trusting. If a norm of equality demands that I offer half, then this might jump-start trust among strangers. However, if the norm is crumbling and a new generation is abandoning it, then this does not bode well for the expansion of trust among strangers.

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