

The Wasted Generation: Intergenerational Trust in Russia

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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.

Transitional societies, however, typically have a shortage of trust in both domains. Old authoritarian governments bred social atomization; and old state-directed economic institutions bred protectionism and corruption. The lack of trust is especially dramatic in post-communist countries: As, Mishler et al., 1998 demonstrate, levels of trust for both institutions and people are substantially lower than in Western Europe. Yet postcommunist citizens are not completely devoid of faith in other people. Gibson, 2001 shows, for example, that Russians tend to have a generalized suspicion of institutions and of strangers, but high levels of “in-group” trust – of their own family, friends, and ethnic groups. Much of the work on trust in transitional countries relies on attitudinal data that taps one dimension of trust. This project turns to a behavioral measure of trust and sorts between explanations based on norms, ethnicity, gender and age.

This research focuses on two Russian Republics, Tatarstan and Sakha (Yakutia), that have the potential for ethnic unrest. Drawing our subjects from a random sample of the population in each Republic we ran a trust experiment based on the investment game reported by Berg et al., 1995. Our design allows us to test for the effects of ethnicity, village life and intergenerational differences. In the next section a brief bit of background is provided about the two Republics. The subsequent section more fully discusses expectations about ethnicity and intergenerational differences. The third section addresses the trust game and details our own research design. The fourth section analyzes the data from the trust experiment. The final section concludes.

Tatarstan and Sakha.

We focused on Sakha and Tatarstan for several reasons. As leaders in the campaign for republic sovereignty and for interethnic accommodation, they represent critical cases for the study of interethnic relations. They were also the focus of an earlier study, by Donna Bahry, Gail Lapidus (Stanford) and Leokadia Drobizheva (Institute of Ethnology and Anthropology, Moscow) in 1997-98, on public orientations toward sovereignty and secession.

While the republics are similar in their quest for sovereignty, they also represent contrasting cultures – ranging from reformist Islam among Tatars to shamanism among Yakuts, from habitable environments in Tatarstan to the coldest inhabited city in the world in Sakha. The two regions also differ in the character of local production and the cultural division of labor among nationalities. The Sakha economy is predominantly

geared to primary industries, accounting for most of the Russian Federation's diamonds, and a good share of its gold, plus oil, gas, and other natural resources. In the Soviet era, the development of these sectors was managed in Moscow, and the region got very little of the proceeds. The mines/mineral sites were worked largely by immigrants from the Western part of the USSR lured to Siberia by very high wages and generous benefits (Marples, 1999). Yakuts were employed in other, far less remunerative sectors, such as agriculture and services (Maksimov, 1990).

With the quest for sovereignty in 1990, the republic government pushed for and obtained a sizeable stake in the development of the most profitable resources such as diamonds and gold (Kempton and Levine, 1995); attempted to appoint more Yakuts into management and into mining jobs; and obtained the right to sell its products abroad and attract foreign investment on its own. As well, political transformation since 1989 has led to an overwhelming predominance of the titular nationality in both elective and appointive offices (Khazanov, 1995).

But the republics also faces a host of problems. The rollback of republic privileges under Vladimir Putin since 2000 has reduced local access to revenues from the republic's abundant resources, and generally trimmed the region's autonomy. Nativization of managerial ranks has proved to be difficult in Sakha due to few Yakuts with training and experience in key sectors. Recruiting them to high-paying mining jobs has also proved to be complicated, though explanations for the problem vary.¹

Climate and location also make Sakha a good case study for our purposes: The harsh conditions in the arctic intensify the risks and uncertainties of the transition. The area is rich in resources, but many tend to be located in remote areas with high extraction costs. The relative underdevelopment of the consumer goods sector means that most goods must be imported, also at high cost.

Some Yakut informants suggest that the climate and harsh physical surroundings also shape ethnic norms: since individuals can't survive alone in the bitterly cold conditions, they need to cooperate with each other to survive. The difficult climate and the concentration on minerals also affect the orientations of the local Russian population who are attracted to the republic by high wages, but find the conditions too forbidding to settle permanently. To many Yakuts, it appears that the immigrants have little stake in the republic or in developing accommodation or tolerance toward Yakut culture and customs – or learning the local language (Balzer, 1995). Interethnic relations have therefore been strained at times, especially in the late 1980s – early 1990s.

As an oil-producing region, Tatarstan too has had a high stake in greater economic sovereignty. Agreements from 1992 onward have granted it a substantial degree of

¹ Some Slavic officials explain that Yakuts themselves refuse to work in high-paying mining jobs, because Yakut culture and physical abilities are not suited to conditions in the mines. Many Yakut informants dispute this description, arguing that they face an unfriendly environment among the Russian-speakers in the mines. We takes thee disagreements to signal deeply embedded stereotypes about each group.

control over the local economy and over the right to integrate into global markets (Mukhariamov, 1998), though it, too, has faced a rollback of local rights under Putin. With its more diversified economy, it has had somewhat greater success with foreign investment (Morozov, 1998).

Also in contrast to Sakha, Tatarstan's initial cultural division of labor was not nearly so unbalanced. There were fewer sectors dominated by either Tatars or Russians, except for agriculture (Tatar) and some areas of heavy industry such as truck production (Russian, in Naberezhnye Chelny). The more temperate climatic conditions and diversified economy in Tatarstan also mean that Russian immigrants have been more willing to stay. Most Russians would thus appear to have a higher stake in republic development and in interethnic accommodation

Ethnicity and Intergenerational Change.

Trust is a particularly appealing concept for understanding transitional societies. However, the concept is slippery. Some argue that it is the glue that holds society together while others argue that it is the lubricant for society, reducing transaction costs in varying forms of social, political and economic exchange.

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).

Much of the literature pertaining to trust focuses on repeated interactions among people. From such interactions individuals learn the reputations of others (e.g., whether they are trustworthy). Even if individuals do not know their partner they will seek reputational cues to guide them in making a decision. In a small city a particular individual might not be known, but that individual's family or neighborhood might be an important cue for assessing trustworthiness.

In more populous settings individuals often interact with strangers and often make decisions that require a trusting move. This is a key point argued by Macy and Skvoretz, 1998 in which strangers are seen as interacting through many unregulated exchanges. What conditions might give rise to trust among strangers? First trust may be trivial if supported by well-defined institutions. If there are strong institutional guarantees that reduce the potential loss of a truster, then the need for widespread trust is minimized. This leads Hardin, 1993 and Ruscio, 1999 to differentiate between generalized trust in

others and institutional trust. With generalized trust in others, individuals have to develop beliefs about how others are likely to respond and assess the particular type of person who is being encountered. By contrast, if institutions are considered benign, fair and can easily be invoked, then it is easy to trust a stranger. If individuals can rely on institutions to guarantee a risky choice, then there is little cost to trusting a stranger. This, in part, is what Bohnet et al., 2001 point to when considering the ways in which institutions enhance trust.

Others like Ostrom et al., 1994 detail the ways in which weaker institutions may support trusting behavior (and by extension greater cooperative behavior). Although those institutions may not directly guarantee a trustor against losses, those institutions provide mechanisms that help in monitoring and sanctioning others. In part those institutions provide a way by which reputations are built and sustained and in which credible threats can be applied in repeated play. Others look to particular institutional mechanisms as commitment devices that encourage trusting relations (see for example, Greif et al., 1994).

What happens when the institutions are weak or have collapsed? Granovetter, 1995 (also see Gibson, 2001) argues that dense social networks may serve a similar function. Such networks provide for considerable reputational monitoring. The moment an actor is untrustworthy, that information is quickly broadcast within the network.² Kinship groups may constitute one such network. Unfortunately, these are very limited networks that cover a relatively small number of people. A different type of network, operating in much the same vein, might rely on ethnicity. Ethnic groups are often quite large and it is unlikely that the individuals know the reputations of everyone with whom they come into contact. Fearon and Laitin, 1996 argue that ethnic identity provides a basis for interethnic cooperation. 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).

Glaeser et al., 2000 make a similar kind of argument when they consider the concept of social distance. By this they mean that individuals sharing the same underlying traits are more likely to trust one another. Indeed, they find some evidence that people of the same race or nationality are more likely to take a trusting move than people of different races or nationalities (where they do not share similar underlying traits). Eckel and Wilson, 2002 obtain a similar finding under more controlled conditions. Likewise Fershtman and Gneezy, 2001 investigate social stratification in Israel and find that ethnicity is related to trusting behavior. In particular they find that negative ethnic stereotyping of Jews of

² 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 **Dunbar, Robin**. *Grooming, Gossip and the Evolution of Language*. Cambridge, MA: Harvard University Press, 1997..

eastern origin leads to less trust of this ethnic group by both eastern and Ashkenazic Jews. Rather than stereotyping, Buchan et al., 2001 return to the concept of social distance and find differences across their subjects from different Far Eastern countries.

Ethnicity, then, may be an important mechanism for trust in transitional societies because ethnic groups build cultural symbols that produce considerable information about appropriate behavior. But ethnicity is not the only source of cultural symbols. Generational similarities may also serve as a mechanism defining trust (while at the same time leading to intergenerational distrust). Chwe, 2001 illustrates the ways in which ritual and symbolic action provides the basis for “common knowledge” and how this in turn solves many coordination problems. At the heart of trust is a coordination problem between the truster and the recipient over which signals need to be read and whether they are credible.

This is particularly relevant in the Russian case. The younger generation (under 30) has very different experiences and cultural symbols than the middle generation (30 to 60). The younger group was barely in its teens by the time of the collapse of the Soviet Union. The middle generation, on the other hand, grew up following World War II, under the full force of modern Soviet education and had a common set of symbols to which they could appeal. This cohort was deeply steeped in the old Soviet ideology and way of doing things. In line with the idea that it is difficult to teach old dogs new tricks, we think of them as the “wasted generation.” The older generation, in the meantime, had survived the disruptions of World War II and Stalin. All three groups have very different reference points and that may provide the basis for differential trusting.

We are left with a number of ways of thinking about the problem of trust. 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? We have three hypotheses concerning the source of 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 special 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 heightened conflict across ethnic groups. Finally it may be that norms have arisen 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

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 randomly matched 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 Ostrom and Walker, 2002 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.

Experimental Design

The project has two empirical parts. Subjects in the experiment were first interviewed using a face-to-face survey. That survey lasted around two hours and covered a number of items related to past work habits, ethnicity and nationalism, and trust items. Subjects were interviewed three to four weeks prior to the experiment. To date a total of 2390 individuals have been interviewed and these data are being machine recorded.

In the second part of the project, subjects who were interviewed were asked to participate in a laboratory experiment. Typically, the respondents were contacted three to five weeks following the interview. While we sought a random sample of respondents, this was not always feasible. We did not run experiments in villages that were too small to have generated at least 20 interviews. As well we were dependent on interviewers returning to ask those they had previously interviewed. Some interviewers worked harder than others.

The design of the experiment allows us insight into different ethnic mixes. We deliberately chose regions of each Republic in which we could find heterogeneous and homogeneous ethnic groups. For example in Sakha we chose villages that were entirely Yakut, we chose the largest city, Yakutsk, which was mixed Yakut and Russian and we chose Neryingri, a small city which was almost entirely Slavic. Yakuts and Slavs are quite different in appearance and subjects could easily tell the ethnic composition of their group.

Approximately a week from the planned experiment session interviewers returned to respondents and again asked whether they would like to attend. They were promised 150 rubles as a show-up fee (approximately \$4.50 US and close to the average daily wage in Tatarstan). Those who agreed at this point were given 30 rubles and told the remainder would be paid on showing up. In addition, subjects were told that they would have an opportunity to earn more money during the course of the experiment. Interviewers were paid 20 rubles per subject who turned up and whom they had recruited. Subjects were given a letter indicating the time and place and they were asked to bring that letter with them – almost as a ticket of admittance. This served (partly) to ensure that we conducted experiments on people who had previously been interviewed, with the aim of linking their behavior in the experiments to their attitudes expressed in the surveys. We still had to double check people's names and addresses against a master list of those who had been interviewed. The typical experiment would find one or two subjects showing up who had not been interviewed. They were substituting for a relative, accompanied a friend or had heard that they could make money participating in the experiment. Those individuals were turned away.

A total of 652 subjects were tested, with 254 from Tatarstan and 398 from Sakha. A total of 47 experimental sessions were conducted over a period of 9 weeks.³ Each session

³ Five sessions were conducted in late September and early October in Sakha. Because of the difficulty with tracking down subjects during the late summer months the last five sessions were delayed. The claim was

lasted approximately two hours. Twenty of the sessions were in Tatarstan and the remainder were in Sakha. Sessions averaged 13.8 subjects (ranging from a low of 7 to a maximum of 23). The average payoff was 540 rubles in Tatarstan and 558 rubles in Sakha (between \$17.40 and \$18.10 US).

Facilities and Set-up.

The facilities varied a great deal. Most of the experiments were held in schools or public libraries. Some had more space than others. Typically subjects sat at tables with sufficient space for their tasks. All subjects were in the same room for all experiments. Logistically it was nearly impossible to obtain more than a single room.

As well, we used the same experimenter in each region. It would have been difficult to run these experiments in two different rooms. We had one experimenter in each location who was fluent in both Russian and the titular language (Tatar or Yakut). In fact in several sessions, because of the mix of the subjects, the instructions were given in the local language. All written materials were in Russian.

Prior to being seated, subjects were handed a consent form and asked to read it. Our subjects were loathe to sign anything. They were guaranteed anonymity and they did not want to leave behind any signature that they felt could be turned over to authorities. Consequently the consent form outlined what they would be doing over the course of the experiment and indicated that they could leave at any time without penalty. If they did not want to participate they could take their show up fee and leave immediately.⁴ By remaining in the experiment after reading the form they were informed they had given their consent. Once the consent form was read and agreed to, subjects were checked into the experiment and then were handed an index card with their ID number for the experiment (the ID cards were randomly ordered). They were seated randomly throughout the room with the aim of breaking up subjects who had arrived together.

An Administrator conducted each experiment. A different Administrator was used in Tatarstan and Sakha. Both were female, were native and were fluent in Russian and the titular language (Tatar or Yakut). All written materials were in Russian, including the script and outline for the experiment. However in a number of sessions the instructions by the Administrator was given in the titular language as requested by the subjects. At the outset of the experiment there was a 10 minute introduction and the Administrator answered any questions that were raised. Sessions varied as to the number of questions, but in every session people were curious about the types of decisions they would be making and why we were interested in them. A scripted set of answers were prepared and subjects were told they would be given very explicit instructions later on in the experiment.

that subjects were either in the forest hunting, at their dacha planting, or in the village visiting relatives. These late sessions were conducted by the first author in the largest city in Sakha, Yakutsk.

⁴ We had a total of five subjects who showed up, collected their fee, and refused to participate.

Subjects were first given a simple questionnaire. The questions were very limited and the instrument was designed to train subject to write their ID number in the upper right box hand for all forms. The instrument was easy to complete and rarely took more than five minutes. It also reassured the subjects – they were quite used to filling out forms with basic personal information.

Once the forms were collected, subjects were given their own private cubicle – a small cardboard box with one side cut out. This was an easily portable screen for subjects that ensured privacy when making decisions. In Tatarstan the boxes came in all shapes, sizes and flavors (several boxes that had transported dried fish were rejected for obvious reasons). In Sakha the boxes were more uniform in size. Carrying the broken down boxes on the street caused more than a few remarks from passersby. Not only did the subjects need privacy, but at various points in the experiment they needed to hide the color of their poker chip and their ID card from others. However, the research assistant passing out forms and returning envelopes needed to observe these things. All-in-all the arrangement worked very well, even in close quarters.

Prior to the “trust game” subjects made five distinct decisions. In the first two decisions subjects played the role of a “dictator” allocating 8 ten-ruble notes between themselves and counterparts not in the room.⁵ In the next two decisions they were handed envelopes from other people (again, not in the room) and asked to predict what those people had decided. In the final decision subjects were given two envelopes, each with a picture of the person who had made the allocation. Subjects were asked to choose an envelope and then guess the contents. Subjects were not allowed to open the envelopes – instead they were told to put all three envelopes to the side and were told they would later be able to open them and keep the contents. Once they had finished all of these decisions, subjects played the trust game.

Trust Game.

At this point subjects were told 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

⁵ 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.

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. This task was similar to the first two dictator games. However, subjects were reminded that there were many differences between what they had done before and what they were now doing. First, any money put in the send envelope would be tripled and then given to their counterpart, who was in the room. Several examples were given: 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 given, 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 Rick Wilson. 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 was put in the send envelope, they were then 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 that asked 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.⁶ It was at this point that the random pairing between subjects occurred. At the same time the envelopes from the second movers were

⁶ 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.

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 in to 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 Rick Wilson who then recorded how much was returned (and with whom the subject was paired). While these data were recorded, subjects were asked to write their birth date on their index card that had their ID number. As well the blue and white chips were collected from subjects.

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. Following this task subjects made several more decisions. This paper reports only the results from the trust game.

When conducting cross-national research, Roth et al., 1991 raise five issues. In their view, to have meaningful comparisons across experiments, all five should be addressed. While a useful guideline, some aspects of this wish list ignore problems with field work.

1. Controlling for subject pool equivalency.

Because of the possibility of very different types of convenience samples (college students picked in one country, day laborers in another) Roth, et al., 1991 recommend selecting comparable populations. Buchan, et al., 2001 sensibly suggest college students, in large part because these are easy groups to find and because they are relatively homogeneous. In footnote 5 they suggest that a random sample of the population would be nice, but nearly impossible. Our populations are randomly selected and constitute a cross-section of the population. While not impossible to obtain, it was exceedingly difficult and costly.

2. Controlling for currency effects.

Because there are differences across countries in terms of how money is valued, comparability requires similar units. Although both Republics use rubles, there was some difference in cost of living. We did not adjust for that difference in the trust game. However, the 80 rubles given to the first mover was equivalent to half a day's wage in Tatarstan and a third of a day's wage in Sakha.

3. Controlling for Language Effects.

The same script should be used across countries. This ensures that subjects are hearing the same instructions. While all of our instructions were in Russian (and had been forward and backward translated), our Administrators often slipped between

Russian and the titular language. We worked closely to ensure that everything was stated similarly in both regions. However, consistency depended on the Administrator keeping with the script when speaking in Tatar or Yakut.

4. Controlling for Experimenter Effects.

The experimenters should not have an independent effect. We tried to control for this by using females as Administrators in each Republic. Both were of the regional ethnic type. The assistant to the Administrator was the same male graduate student who was present in both Republics.

5. Controlling for Comprehension of Experimental Task.

Subjects should demonstrate they understand the task. All of the tasks required subjects to respond to a comprehension check. This check was performed orally and subjects were also given the opportunity to raise their hand and have questions answered.

Given the conditions under which some of the experiments were performed (often with no electricity or running water in remote villages), we think we have gotten close to experiments run in the lab. The difference here was that the lab went into the field.

Analysis

Aggregate Findings.

Overall we find considerable trusting behavior. Almost 60 percent of the subjects trusted their counterpart with half or more of their endowment (see Table 1).⁷ This is well above what would be expected if subjects were playing the sub-game perfect equilibrium. In fact, only 11 of 311 subjects refused to send anything to their counterpart. What was sent by these subjects compare well with what was observed in the data by Berg et al. 1995. In their experiments subjects contributed 51.6 percent of their endowment while our subjects contributed 49.6 percent.

⁷ In 30 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.

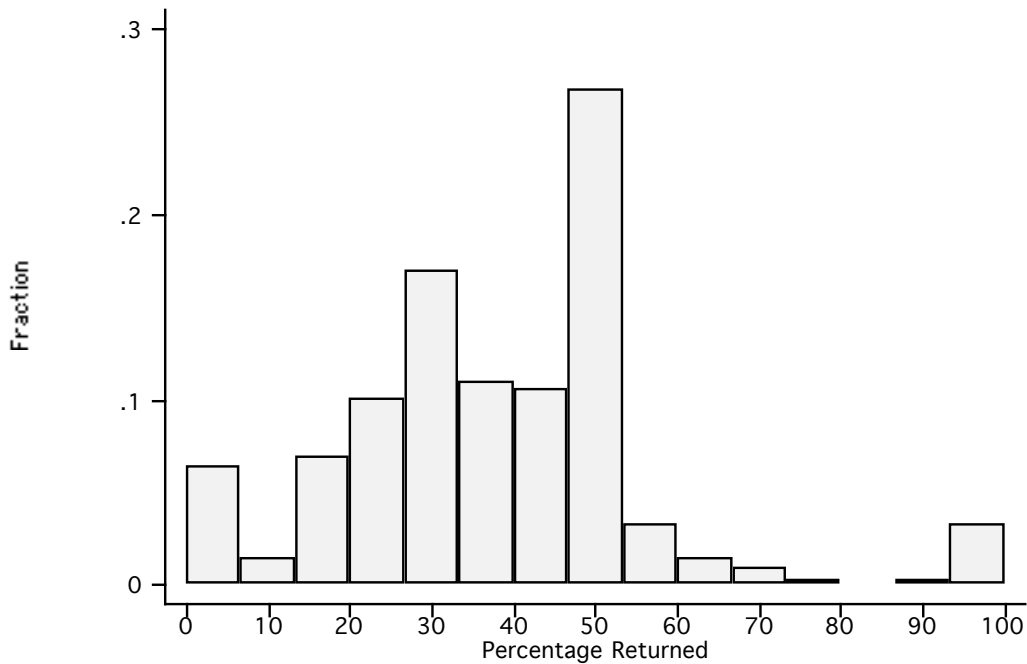
Table 1
Percentage of first movers passing the amount (in rubles). Frequencies in parentheses.

Rubles	Overall	Tatarstan Only	Sakha Only
0	3.54 (11)	4.96 (6)	2.63 (5)
10	3.86 (12)	7.44 (9)	1.58 (3)
20	14.47 (45)	19.83 (24)	11.05 (21)
30	18.33 (57)	19.83 (24)	17.37 (33)
40	33.12 (103)	33.88 (41)	32.63 (62)
50	7.72 (24)	5.79 (7)	8.95 (17)
60	6.11 (19)	3.31 (4)	7.83 (15)
70	1.93 (6)	1.65 (2)	2.11 (4)
80	10.93 (34)	3.31 (4)	15.79 (30)
Total Number	311	121	190

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, while those in Sakha are more likely. We will keep this in mind while analyzing these data.

Absent trust, no matter what amount is passed, nothing should be returned. Yet only 20 subjects out of 329 returned nothing. By comparison 11 subjects returned everything that was sent to them. Trust paid off with first movers sending 39.6 rubles, on average, and second movers returning 46.0 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 to return half of what was sent (the other spike at .5). Subjects, then, are proving to be trustworthy and we find no evidence that the two regions vary in terms of the levels of trustworthiness (a ttest shows that there is no difference between the regions, $t=.613$, $p=.54$)

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



Figures 2 and 3 provide better pictures of what subjects were doing over the course of the experiment. The figures are bar charts with bars representing the amount returned by the second mover and the thick line passing horizontally through the figure representing the amount sent by the first mover. The bars are ordered from those first movers who sent everything (80 rubles, which was tripled to 240) to those who sent nothing. Bars that are above the thick line indicate instances in which trust was repaid. Bars below the thick line indicate cases in which trust did not pay. As can be seen there is substantial variation in how much is returned.

Figure 2.

Amount returned by subjects in Tatarstan. The vertical axis is the amount in rubles. The horizontal axis are the subjects, arranged from those who sent the most to those who sent the least. The thick, mostly horizontal, line indicates how much the first mover sent.

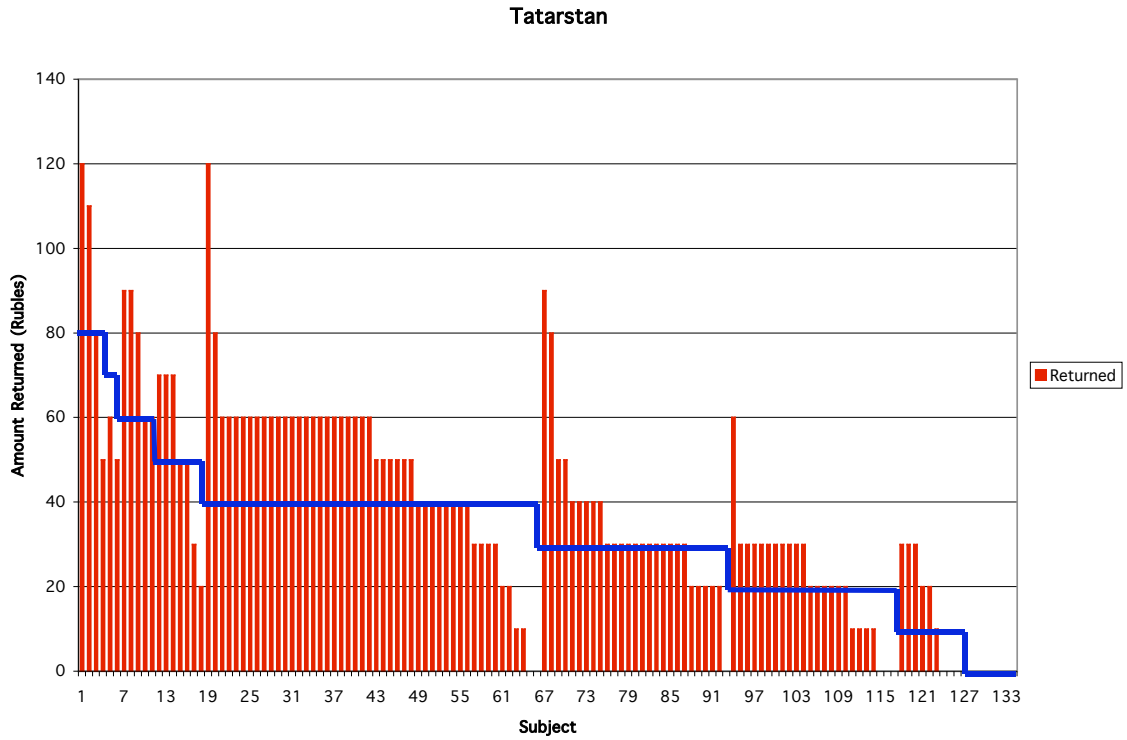
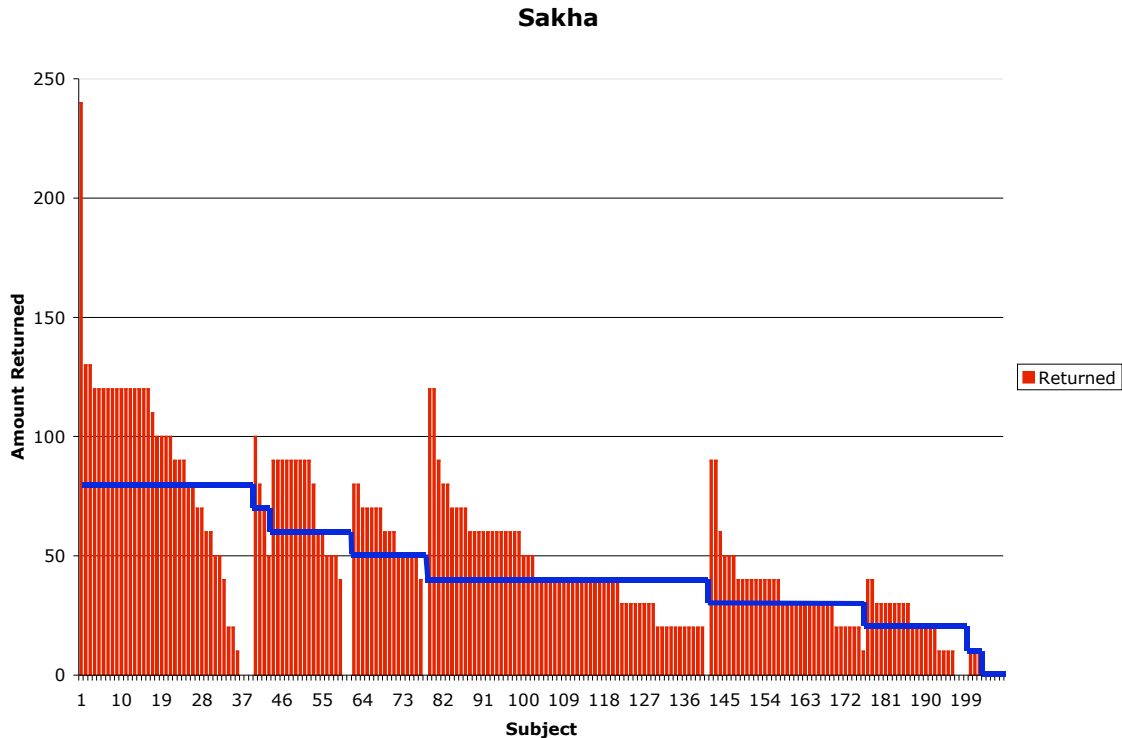


Figure 3.

Amount returned by subjects in Sakha. The vertical axis is the amount in rubles. The horizontal axis are the subjects, arranged from those who sent the most to those who sent the least. The thick, mostly horizontal, line indicates how much the first mover sent.



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.

We test among three explanations for the trusting and trustworthy behavior we find. The first explanation has to do with dense social networks, the second concerns ethnic interactions and the third focuses on age cohorts. We run separate, but comparable, models for subjects in Tatarstan and Sakha and at the same time we treat trusting behavior and trustworthy behavior in distinct models.

We model characteristics of the individual subjects as well as compositional variables that have to do with the experimental session. In order to test for the effect of dense social networks, we use a simple dummy variable, *village*, indicating whether the experiment was carried out in a village. The villages in which these experiments were conducted had fewer than a thousand people (often much fewer). It was usually apparent that subjects knew one another quite well. About one third of the experiments were run in such settings, the remainder were run in medium-sized cities and urban areas.

The second explanation concerns ethnic interactions. Here we measure the subject's ethnicity by asking them their *nationality*. This is an indirect measure because nationality is not necessarily an ethnic category. Slavic Russians who had been in Tatarstan all their life might consider themselves to be Tatar. Yet they might not be accepted as an ethnic Tatar.⁸ Nonetheless, we think that subjects identifying with the titular nationality are more likely to hold ethnic identity and they are more likely to trust others in the region. The nationality variable is coded as 1 if the subject indicated they were of the titular nationality (Tatar or Yakut, depending on the Republic) and zero otherwise. We also develop a measure concerning the *homogeneity* of the group. Initially a measure was created for the percentage of subjects who identified as the titular nationality. This measure was then folded in half and ranges from 50% to 100%. In this manner a group that was 80% Slavic has the same effect as a group that is 80% composed of the titular nationality. In both Tatarstan and Sakha it was very clear who was a member of each group. The presumption is that homogeneous groups, even made up of strangers, will be more trusting than groups that are more heterogeneous.

The third explanation concerns the various age cohorts and the cultural symbols that they reference. The first variable is the self-reported *age* of the subject. Because we expect the relationship to be curvilinear (in fact U-shaped), we include a second term that is age^2 . Once again we are also concerned with compositional features of the experimental session and we measure the percentage of subjects who are “*young*” (30 and under) in the group. As with ethnicity, this was an attribute about the group that was readily observed.

We also include a number of control variables. The first is the *sex* of the decision maker. There is a great deal of evidence showing that the sex of the subject matters for making a trusting move (see for example, Croson and Buchan, 1999, Scharlemann, et al., 2001, Fershtman and Gneezy, 2001). The usual finding is that females are much less likely to trust, although they are more likely to reciprocate trust. Sex is measured as a dummy variable with females taking on a value of 1 and males a value of 0.

Another control variable concerns the amount that subjects kept in the first two dictator games. Subjects knew they had already earned that amount for the experiment. This can serve as a control for an income effect, especially since the stakes with which we were dealing were not trivial.⁹ On the other hand, the amount that subjects kept could well sort them into people with different traits: those who are fair and those who are not.

Finally, we recorded the expectations of the second movers. Prior to seeing how much they received from the 1st movers we asked what they expected to receive. In addition we measure misplaced expectations by taking the difference between what they received

⁸ Once we clean and merge our attitudinal data with the experimental data, we will be able to more finely discriminate among our subject types. At this point we use the very rough measure of self-reported nationality from the initial part of the experiment.

⁹ Subjects also were asked to guess how much was in each of three envelopes prior to the trust game. They did not open those envelopes until the end of the experiment, so they did not know the contents. The sum of these guesses had little impact on the estimates and usually was not close to significance.

and their expectations. As Rabin 1993 argues, subjects might punish those for who they had high expectations (e.g., expecting a large amount, but receiving little).

Table 2.
Descriptive Statistics for Independent Variables (Tatarstan).

	Mean	Std. Deviation	Minimum	Maximum
1 st Mover's Age (years)	43.3	15.5	18	82
2 nd Mover's Age (years)	45.9	15.9	18	79
1 st Mover Nationality (percentage)	67.9			
2 nd Mover Nationality (percentage)	56.0			
1 st Mover Female (percentage)	69.4			
2 nd Mover Female (percentage)	65.7			
Expectations by 2 nd Mover	35.07	19.3	0	80
Difference in what was passed and what was expected	-2.1	26.2	-80	70
1 st Mover Earnings	100.4	29.5	30	160
2 nd Mover Earnings	97.6	34.9	0	160
% under 30 in the group	22.79	12.0	0	44.4
% homogeneity	72.9	16.8	50	100

Descriptive Statistics for Independent Variables (Sakha).

	Mean	Std. Deviation	Minimum	Maximum
1 st Mover's Age (years)	40.2	15.0	18	77
2 nd Mover's Age (years)	39.4	14.7	18	77
1 st Mover Nationality (percentage)	54.1			
2 nd Mover Nationality (percentage)	50.2			
1 st Mover Female (percentage)	64.1			
2 nd Mover Female (percentage)	64.7			
Expectations by 2 nd Mover	39.3	19.6	0	80
Difference in what was passed and what was expected	6.0	27.8	-60	80
1 st Mover Earnings	91.9	33.2	0	160
2 nd Mover Earnings	91.0	32.0	0	160
% under 30 in the group	33.6	18.3	0	66.7
% homogeneity	79.5	19.4	52.9	100

Ordinary least squares is used to estimate two different models.¹⁰ In Table 3 the first model predicts the amount that is sent by trusters in Tatarstan while the second model is for Sakha. All of the coefficients are presented. Separate models were estimated for specific individual characteristics and compositional effects. The best fitting models are presented here.¹¹

There is little support for the idea that dense social networks are leading to increased trust. The coefficient for the dummy variable *village* is insignificant. Even if it were, it contributes less than 2 rubles to the overall amount sent by subjects. Although a crude

¹⁰ Alternative estimators were used, including Ordered Logit and Tobit. The former was used because of the categorical nature of the choices – subjects were limited to nine ordered alternatives. Tobit was used because even though there is a linear order to the data, subjects were bounded at sending nothing or sending 80 rubles. The findings for both Ordered Logit and Tobit are consistent with what we find using OLS. Robust standard errors derived from Huber-White sandwich estimator of variance are used throughout.

¹¹ During the course of diagnostics on these models, we discovered that one session in Tatarstan was very suspicious. In referring to our field notes, we had questioned at the time whether the data for that experiment were clean. This experiment involved a village adjacent to one where an experiment had been run the previous day. It appears that subjects were instructed or colluded as to what to do. The data from this session are clearly an outlier and were thrown out of the analysis.

measure of the degree to which people know one another, it indicates there is no difference in trusting behavior between subjects in villages, cities or urban areas.

There is also little support for the idea that trusting behavior is based on ethnicity. There are no discernable effects for either the ethnicity of the first mover or the composition of the group. Even in separate estimates for different ethnic groups do not have an effect on the coefficient for the composition of the group.

There is a great deal of support for an explanation based on the age of the actors. The relationship is clearly nonlinear. The polynomial expression for age is significant for both Tatarstan and Sakha. It indicates that the young and the old are less likely to send something to others, while the middle-aged are the most likely to trust. The coefficients are quite strong and more pronounced in Sakha than Tatarstan. Also interesting is the impact of the age composition of the group. Although the young are among the least likely to send something to someone else, the overall amounts sent increase with the percentage of the group that is 30 or below. It is as if expectations are that the young will be more trustworthy.¹²

Two of the control variables are important. The first is the sex of the first mover. Consistent with the findings by Croson and Buchan, 1999, among others, females are less likely to trust. In both Tatarstan and Sakha the effect is negative, though only significant in the latter. Also important are the prior earnings of the first mover. This has a strong, negative, effect. Because subjects chose how much to keep in the first two decisions (dictator games) it is unlikely that this variable measures a wealth effect. Rather it more likely measures a predisposition of the decision maker for fairness.

¹² Once again a number of different age specifications were tried. Also included in the model were variables measuring the percentage of the group that was elderly. While the percentage over 60 had a negative impact on the amounts sent, the estimates were unstable.

Table 3.

OLS Estimates for Trusting Behavior. The Dependent Variable is the number of rubles passed to the second mover (ranging from 0 to 80 in units of 10). Standard Errors are given in parentheses and relationships significant at the .05 level are bolded.

	Model 1 (Tatarstan)	Model 2 (Sakha)
Constant	35.96 (12.28)	15.75 (14.91)
1 st Mover's Age	.82 (.35)	1.70 (.50)
1 st Mover's Age ²	-.009 (.004)	-.02 (.01)
1 st Mover's Sex (1=Female, 0=Male)	-1.35 (2.24)	-9.13 (2.77)
Nationality (1=Titular, 0=Otherwise)	-2.17 (1.63)	.25 (2.72)
1 st Mover's Prior Earnings	-.33 (.04)	-.19 (.05)
Village (1=Village 0=Otherwise)	1.72 (5.02)	1.92 (4.39)
Percentage Homogeneous	.13 (.10)	.11 (.10)
Percentage 30 and Younger in the Group	.30 (.10)	.33 (.11)
	N=122 R ² =.51	N=206 R ² =.20

When subjects are trusted (passed an amount of money), what percentage do they return? What drives trustworthiness? As we have already noted, trust appears to pay, in the aggregate. Table 4 produces two models, again for Tatarstan and Sakha. These models indicate that none of the explanations for trusting behavior appear to explain trustworthiness. There are no discernable effects for subjects in villages – in fact the coefficients are in opposite directions for Tatarstan and Sakha. Ethnicity and the homogeneity of groups have no effect. Even age has no impact. Several different specifications were tried for age (including various polynomials) and none are significant.

The second mover's sex has no effect. Expectations (both met and unmet) make a difference in Tatarstan, though not in Sakha. People with high expectations are more likely to return a higher percentage of what was passed to them. This is tempered, however, by whether the amount actually passed exceeded or fell below expectations. An amount that is passed that exceeds expectations results in more being returned, while a shortfall decreases what even an optimistic subject will return. However, this is the case only in Tatarstan. Finally, as with the trust model, we find that what subjects kept in the initial dictator games predicts how much they will return in the trust game. The more that was kept the less subjects returned.

Table 4

Percentage of money that was returned. The Dependent Variable is the percentage of the tripled rubles returned to the first mover. Standard Errors are given in parentheses and relationships significant at the .05 level are bolded.

	Model 1 (Tatarstan)	Model 2 (Sakha)
Constant	61.15 (24.70)	57.87 (12.85)
2 nd Mover's Age	-.08 (.12)	.12 (.09)
2 nd Mover's Sex (1=Female, 0=Male)	4.09 (3.92)	.42 (2.53)
Nationality (1=Titular, 0=Otherwise)	.36 (4.19)	1.17 (3.21)
2 nd Mover's Prior Earnings	-.31 (.07)	-.23 (.04)
Expectations	.30 (.16)	.11 (.08)
Difference between what was passed and expectations	.35 (.14)	.02 (.06)
Village	7.65 (8.51)	-5.62 (3.97)
Percentage Homogeneous	-.11 (.22)	-.03 (.09)
Percentage 30 and younger in the Group	.11 (.18)	-.16 (.09)
	$r^2=.27$ n=122	$r^2=.25$ n=290

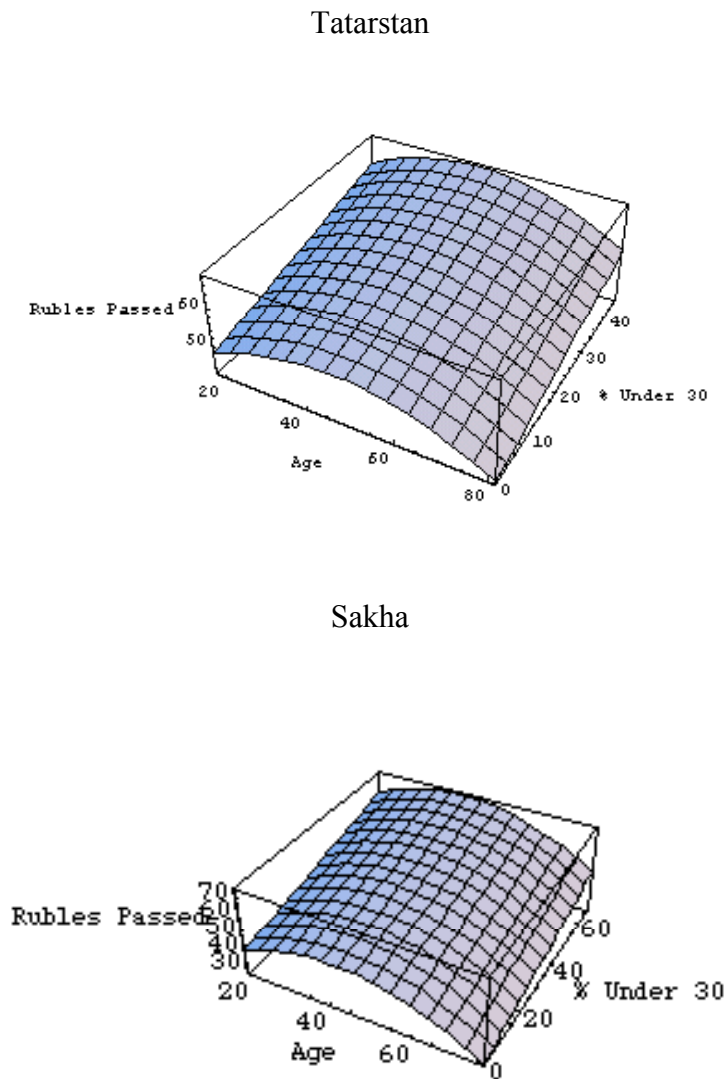
Discussion

We find considerable trust and reciprocated trust in two Republics of Russia. These Republics have both experienced considerable transition. We expected that there might be little trust among subjects or where there was trust, it would be grounded in villages, ethnic groups or in age cohorts.

Our results find little support for the idea that dense social or ethnic networks provide the basis for trust or trustworthiness. A simple experimental manipulation – conducting experiments in villages – shows no effect on the rates of trusting or trustworthy behavior. Crude measures of nationalism and group homogeneity show little impact on trusting or trustworthy behavior.

We find considerable support for the idea that there are distinct age cohorts that behave quite differently. The “wasted generation” is the most likely to trust others, while the young and the old are the least likely. This effect is quite strong across the Republics and is likely to tap national norms, rather than regional norms. The structure and extent of these norms are unclear and require that we merge the behavioral data from the experiments with the survey data. What is surprising is that age has no impact on trustworthy behavior. That behavior is largely conditional on what subjects receive and their own predispositions. The impact of age and age cohort composition on trusting behavior can be seen in figure 4.

Figure 4. Estimate of Rubles sent in Tatarstan and Sakha holding other parameters constant while varying age and group composition (percentage under 30) in their range. Estimates are derived from table 3, models 1 and 2.



Our findings are consistent with those of others in the sense that females are less likely to trust. This finding replicates similar findings in the Far East (Croson and Buchan, 1999), Israel (Fershtman and Gneezy, 2001), Britain (Scharlemann, et al., 2001), and the United States (Eckel and Wilson, 2002). All things being equal, females are less likely to trust than males. We do not find, however, as some have reported, that females are more likely to reward trusting behavior.

Conclusion

There is considerable trust in these transitional Republics, at least as measured by a simplified investment game. Trust does not appear dependent on the ethnicity of subjects and the ethnic composition of the group. This undermines the idea that powerful ethnic differences will thwart social and economic exchange in transitional societies. Nor does trust appear grounded in dense social networks. Subjects exhibit similar levels and distributions of trust whether they were drawn from villages, small cities or large urban areas. Although a subject's place of residence tells us little about the nature of their social networks, it is more likely that people in villages feel that they have linkages with more of those in the room than do strangers in an urban setting. That there is no difference between villagers and urbanites calls into question this form of an explanation.

Generational differences matter for the trusting behavior we observe in these experiments. The middle ("wasted") generation is the most trusting. Their behavior is very predictable. They give half and they expect half. This decision rule is completely expected given the norms of equality learned under the old Soviet regime. Whether this group can move beyond such a heuristic, however, is an open question. What was striking to us while conducting these experiments was the extent to which subjects from this generation were rigid about their behavior and expectations. This does not bode well for a world that is rapidly changing and in which old guarantees are no longer in place. This generation, even more so than the older generation, expected guaranteed jobs, medical care and a pension plan. These have almost completely disappeared from the Russian landscape.

The younger generation is different in that it has only experienced the post-Soviet transition. That generation has different expectations from the state and from the economy. We conjecture that this generation is more likely to look like their U.S. counterparts. It is a generation that may be more adaptive. Unfortunately it will also be a generation less likely to trust others. It may be that their levels of trust will rise once there are institutional guarantees in place. At the moment, however, institutions guaranteeing property rights and political power are still in flux. As to the older generation, we are uncertain how to explain their relatively low levels of trusting behavior. This is a matter for further analysis.

The rich data that we have on the attitudes of these subjects will be valuable in addressing the extent to which there is generalized trust in these Republics and whether those attitudes are related to the behavior of subjects. At this point those data have not been integrated with the behavioral data.

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