Threat and parochialism in intergroup relations: lab-in-the-field evidence from rural Georgia

Max Schaub[†]

Abstract

Competition between groups is widely considered to foster cooperation within groups. Evidence from lab experiments hints at the existence of a proximate mechanism by which humans increase their level of cooperation with their ingroup when faced with an external threat. Further work suggests that ingroup cooperation should go along with aggressive behaviour towards the outgroup, although these theories are at odds with others that see high investments in outgroup relations as important means of stabilising inter-group relations. Surprisingly few of these arguments have been tested in the field, however, and existing studies are also limited by the lack of a direct measure of threat perception and aggressive behaviour. This study presents lab-in-the-field results from a rural context where exposure to an ethnic outgroup varies between villages. This context makes it possible to capture levels of threat perception, aggressive behaviour and cooperation without having to induce intergroup competition artificially in the lab. All concepts are measured behaviourally. Ingroup and outgroup cooperation was measured with a standard public goods game, and a novel experimental protocol was developed that measures both perceived threat and aggressive behaviour: the threat game. The results show that levels of perceived threat, ingroup cooperation and aggressive behaviour are higher in regions more strongly exposed to ethnic outsiders. However, exposed regions also show high levels of outgroup cooperation and a concomitant lack of elevated ingroup bias. This pattern is explained by theorising that communities show parochial altruism when faced with an ethnic outgroup, but balance aggressive behaviour with cooperative offers to diffuse tensions and to keep open channels of mutually beneficial exchange.

Keywords: Cooperation; parochial altruism; threat; behavioural games; intergroup relations; Georgia.

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1 Introduction

Humans frequently engage in cooperative behaviour that benefits group members despite a cost to themselves [1–3]. Examples range from food sharing to mutual defence in warfare [4, 5]. Although the causes for this behaviour remain debated, threat and competition between groups figure prominently among possible explanations [6–8]. Costly cooperation benefitting group members may ultimately have been selected for in a history of violent intergroup conflicts, in parallel with a tendency to disfavour the outgroup [9, 10].

In terms of proximate mechanisms, scholars have described and tested a psychological response by which individuals raise their level of cooperation with ingroup members when faced with competition from an outgroup [11, 12]. Numerous laboratory experiments have confirmed that members of groups contribute more to collaborative tasks when exposed to intergroup competition or comparison than when interacting in isolation. This is true both when payoffs directly depend on the behaviour of another group [13–19], or when the presence of another group is merely mentioned [20, 21] (but see [22]).

Theoretic work and laboratory studies also demonstrate that ingroup cooperation can go along with exclusionary or aggressive behaviour towards outgroup members (i.e. result in 'parochial altruism') [23], although here the evidence is more mixed [24, 25], with other studies showing no close link between ingroup favouritism and aggression against outgroup members [15, 26]. More generally, it is not clear to what extent these findings reflect dynamics in the field, as the limited evidence here is inconclusive, too.

While evidence from post-war settings suggests that the experience of violent conflict may leave people more cooperatively inclined [27, 28], politically engaged [29] or egalitarian [30], it remains unclear what aspect of the war experience may have caused these effects. Studies that more closely observed cooperative behaviour under intergroup competition either also relied on artificially formed groups and intentionally created competition [31], or lacked indicators to rigorously measure levels of cooperation [11]. What is more, both in the analytic games used in laboratory research and in real-world violent conflicts it is often not clear whether it is the perception of threat—the fear of being harmed in the competition—or the prospect of winning the competition that motivates cooperative behaviour [13, 32].

Existing work often conceptualises contentious intergroup relations as residential proximity to an ethnic outgroup. These studies show that outgroup presence does go along with exclusionary attitudes, outgroup discrimination and increased participation in collective political processes [33–36]. Field studies that measure the effect of conflict and threat at the individual level have produced mixed findings, with some scholars identifying positive effects on forms of altruistic behaviour towards the ingroup [37, 38], while others merely find lower levels of cooperation with both in- and outgroup members [39–41].

The present study adds to existing research in three ways. First, the study presents data from a field context where exposure to ethnic outgroups varies between villages and thus did not have to be externally induced. Second, rather than assuming that threat perceptions positively covary with outgroup exposure, this assumption is explicitly tested. Third, all concepts of interest—perceived threat, cooperation and aggressive behaviour—are measured at the individual level and with behavioural measures. A standard public goods game is used to measure cooperation, and a new experimental protocol, the threat game, was developed to measure perceived threat and aggressive behaviour. I find that, in line with prevailing theories, outgroup exposure is associated with increased levels of perceived threat, and produce suggestive evidence for the presence of parochial altruism. At odds with current scholarship, I also find high levels of cooperation with the outgroup. To make sense of these findings, I theorize that this latter result can be explained by the communities balancing parochialism with cooperative offers to the outgroup in an effort to to diffuse tensions and keep open mutually beneficial channels of exchange.

2 Methods

Study setting and design In order to test for the impact of outgroup threat on cooperation levels we would ideally like to compare communities that are identical in terms of history, geography, socio-economic opportunities and residential patterns, but vary in the degree to which they are exposed to an outgroup. The setting of the present study approaches these idealized conditions by exploiting variation in outgroup exposure within the same sub-national region. The experiments were conducted in six villages in the Kvemo Kartli region, Georgia. The Kvemo Kartli region is a compact (6,528 km^2), rural region in the vicinity of the country's capital, Tbilisi. The region is highly ethnically diverse, with ethnic Georgians constituting a numerical minority. In 2002, the year of the last census, 44.7% of the region's 497,530 inhabitants were ethnic Georgians and a similar share of the population (45.1%) were ethnic Azerbaijanis. Among the smaller minority groups, ethnic Armenians form the largest group, with 6.3% (see the Supplementary Information (SI) for more information on the ethnic composition). Unlike other regions in Georgia, Kvemo Kartli has seen no sustained interethnic violence. This means that ethnic settlement patterns have remained relatively stable and have not been upset by large-scale displacement as elsewhere in the country [42]. However, intergroup relations in Kvemo Kartli are not free of tensions. Groups regularly compete over resources such as access to farmland, and in past years there have been violent clashes between ethnic Azerbaijanis and ethnic Georgians that left several people injured and one killed [43].

In the Kvemo Kartli region, ethnic diversity exists largely between villages, while individual village-communities tend to be ethnically homogenous. Moreover, there is within-regional variation in settlement patterns, as shown in Figure 1A. This settlement pattern allows for a close comparison of cooperation,

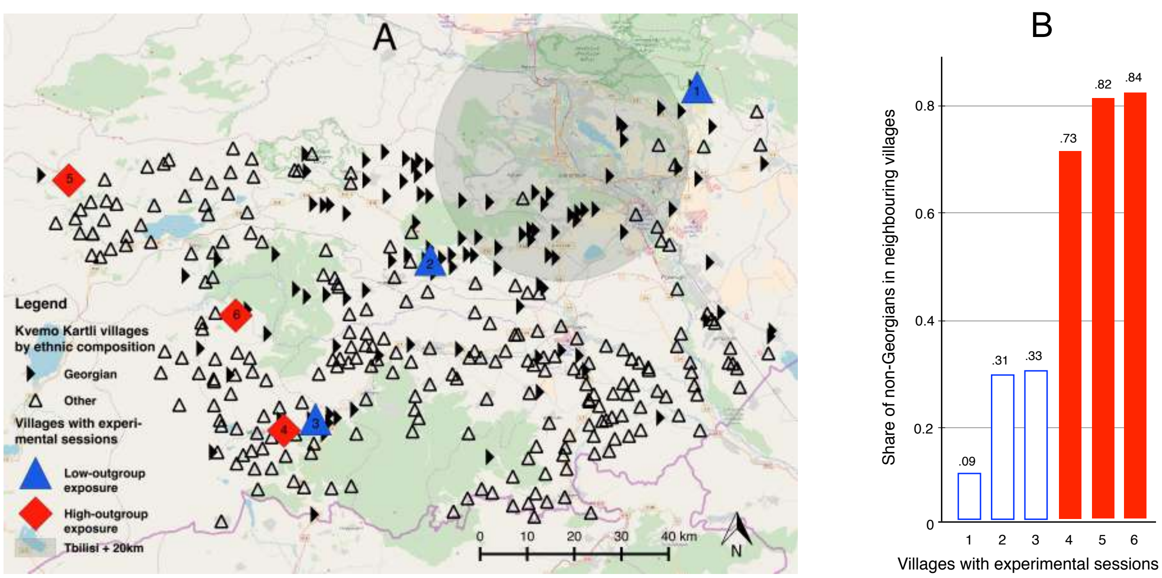

Figure 1: (A) Villages in the Kvemo Kartli region, Georgia, by ethnic composition. Villages in which lab-in-the-field sessions were conducted marked with larger symbols. (B) Share of ethnic outsiders in the 5 villages closest to each village where a lab-in-the-field session was conducted. Villages in the low outgroup-exposure condition marked with blue-outlined bars, villages in the high outgroup-exposure condition marked with red bars.

threat perceptions and aggressive behaviour between communities exposed to a high or low share of ethnic outsiders in their surroundings.

Research was conducted in six ethnically Georgian villages, and outgroup exposure was measured as the share of non-Georgians in the population of the 5 villages closest to each village where a lab-in-the-field session was conducted. Based on these shares, villages were classified into a low outgroup-exposure condition (with >50% ethnic Georgians in the surroundings) and a high outgroup-exposure condition (with <=50% ethnic Georgians in the surroundings) (Figure 1B). In each of the six villages, between 20 and 28 participants took part in the experimental sessions, totalling 71 in the three villages in the low outgroup-exposure condition, and 69 in the three villages in the high outgroup-exposure condition. Villages in the two conditions were closely matched on a range of geographic and demographic indicators (see Table S1 in the SI for statistics and tests).

Behavioural games In order to measure threat perception and aggressive behaviour, a dedicated analytic game was developed: the threat game (more detailed information about the game is provided in the SI). In the threat game, participants are asked to make costly decisions that reveal how much they fear predatory behaviour from their interaction partner. The game captures the asymmetric nature of a typical threatener-threatened interaction where the more weakly positioned 'threatened' fears a dominant 'threatener'. The threat game consists of two roles: P, the potential predator or threatener, and T, the threatened. Both P and T are given an initial endowment of 20 monetary units (MUs). They are then asked to take decisions in parallel. P is asked to decide how many MUs she wants to take away from T's endowment in order to add to her endowment. P can claim anything between 0 MUs and 15 MUs. Each 1 MU that P manages to take away causes an additional loss of 1 MU to T, meaning that T can end up with a negative payoff.[1] This additional loss generates many of the advantageous properties of the threat game detailed in the SI. For explanatory purposes, during the explanations of the game the additional loss was likened to a burglary, where, in trying to steal valuables, the burglar also causes damage to the house. The amount claimed by a player in the role of P therefore is a behavioural measure of aggressive intent.

By contrast, the task of the threatened T is to estimate how much P will likely take away from his initial endowment, and then to decide how much of his initial endowment to spend on his protection. In his attempt to avoid losses or incurring negative payoffs, T can spend parts or all of his endowment on his protection. Each 1 MU that T spends reduces the amount that P can take away by 1 MU, and

[1] The amount that P could claim was capped at 15 MUs rather than the theoretically possible 20 MUs in order to prevent participants from encountering excessive losses.

also prevents the loss of the additional 1 MU that this would entail. However, the MUs T spends on his protection are non-recoverable, no matter the amount P actually claims. It is therefore optimal for T to spend exactly the amount on protection that he thinks P will take away. The number of MUs spent by T therefore is a behavioural measure of perceived threat. Unlike in the contest games often used to analyse cooperation under competition and threat, in the threat game, the threatened individual cannot gain, meaning that the wish to win over the threatener can be ruled out as a motivation.

Cooperation was measured with a standard public goods game (PGG). For the PGG, session participants were anonymously and at random divided into groups of 3. Each group member received an endowment of 10 MUs and was then asked to decide to invest parts, all or none of this endowment into a public account. Whatever amount was invested in the public account was doubled and evenly distributed among all group members. From this payoff structure it follows that while the group income is maximized when all group members contribute their whole endowment, for any given level of contributions by the other group members, an individual can always be better off by not contributing. The amount of MUs a participant invested in the public account is the behavioural measure of cooperation.

During the sessions, participants first played the PGG and then the threat game. This order was chosen so to avoid exposing them to the competitive setup of the threat game before assessing their level of cooperation. In the PGG, participants made two decisions in randomized order, one when randomly matched with 2 co-villagers in the same room (i.e. coethnic co-villagers), and one when matched with 2 people from neighbouring villages, who could be either coethnics or not, depending on the exposure condition. In the threat-game, participants first decided twice in the role of P (in random order), again either when randomly matched with another participant in the room, or when paired with a person from a neighbouring village. They then made two decisions in the role of T, again in random order.

For all tasks, the interaction with members of neighbouring villages was simulated in the following way. Participants were told that they would be randomly matched with one (in the threat game) or two (in the PGG) inhabitants of the 5 closest neighbouring villages whose decisions had been recorded during an earlier session. In fact, payoffs for all participants were calculated by matching their decisions with a set of PGG, P- and T-role decisions recorded during a trial session in a single Georgian village. Matching the participants' decisions with a stable set of decisions ensured that the average payoffs were equal in all six sessions. In order to obtain measures free of priming effects, at no point was the ethnicity of the inhabitants of neighbouring villages mentioned. Instead, it was assumed that participants were aware of the ethnic composition of neighbouring villages and could base their behaviour on this knowledge. Information on outcomes was only revealed after all decisions had been taken. Detailed explanations and a quiz testing for understanding preceded the decision-making, and a survey was used to collect demographic information. A show-up fee ensured that participants would not incur overall negative payoffs. Sessions lasted 90–120 min and on average participants earned 18 Georgian Lari (about USD 8/Euros 7), 80% of the average daily wage of an employee in agriculture or education.

3 Results

The goals of the analysis are (i) to assess whether outgroup exposure goes along with increased threat perceptions, and (ii) to test for concomitant parochial altruism—increased levels of cooperation and ingroup bias in high-outgroup exposure villages accompanied by aggressive behaviour towards outgroup members. The design of the study allows to measure the concepts of interest—threat, cooperation and aggressive behaviour—in three ways. First, average absolute values for each game decision can be compared between the low- and the high-outgroup exposure condition. Of particular interest here are cooperation with co-villagers, threat perceived from neighbours and aggressive behaviour towards neighbours. Second, the data can be analysed in terms of differences in bias. Participants took all decisions when matched both with co-villagers and neighbours. This allows us to compare the average differential between these two decisions between the low- and the high-outgroup exposure condition. The appropriate statistical test for these average two comparisons are regression models controlling for the unbalanced covariate, age, and prior game decisions. To account for potential clustering at the village level and the small number of clusters/villages, standard errors are calculated with a wild cluster bootstrap procedure (5,000 repetitions) [44]. Finally, the data allows us to analyse bias in terms of within-person differences in behaviour for participants interacting with co-villagers as compared to interacting with neighbours, and to compare these within-person differences across the two exposure conditions. The within-person comparisons are evaluated using Wilcoxon signed-ranks tests for clustered data (random permutation Datta-Satten method, two-tailed) [45, 46].

Outgroup exposure and threat As illustrated in Figure 2, participants in the high-outgroup exposure on average spent 59% of the theoretical maximum on their protection in the T-role of the threat game.

This compares to the low-outgroup exposure condition, where they spent 52% (p=0.07). Participants in the high-outgroup exposure condition also showed stronger bias in terms of threat against their non-coethnic neighbours, spending 8.8 percentage points (pp) more (1.17 times) when matched with neighbours as compared to co-villagers, while participants in the low-outgroup exposure condition showed little bias, spending 3.3 pp more (1.06 times, 5.5 pp difference in bias, p=0.08). Concordantly, within-person differences in spending on protection when matched with neighbours as compared to co-villagers were no different in the low-outgroup exposure condition (p=0.53), but clearly higher in the high-outgroup exposure condition (p<0.001). As widely hypothesized in previous work, these tests demonstrate that exposure to a non-coethnic outgroup indeed went along with increased perceptions of threat.

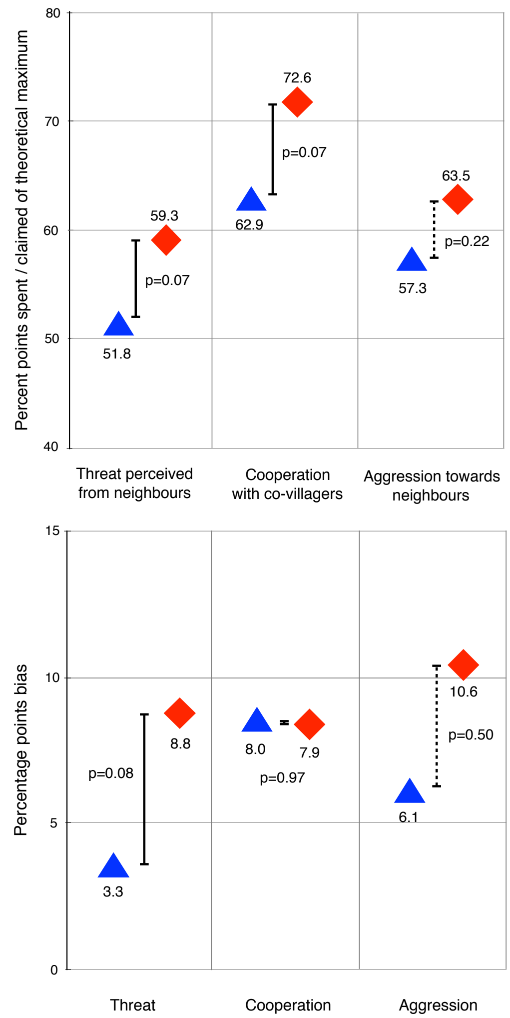

Figure 2: Percentage of total possible MUs spent/claimed in the PGG and threat game in the low- (blue, △) as compared to the high- (red, ◇) outgroup exposure condition, and difference in bias between the conditions. Bias defined as percentage point difference when matched with co-villagers as compared to neighbours. Depicted are the bias *favouring* co-villagers for cooperation, and bias *against* neighbours for threat and aggression. Marginal effects from wild cluster bootstrap regression, resampling at the village level, 5,000 repetitions (SI, Table S2).

Parochial altruism With regard to the first element of parochial altruism, ingroup cooperation and bias, we can see that overall levels of cooperation with co-villagers in the public goods game were higher in the high-outgroup exposure condition, where participants invested 73% of their endowment, as compared to the low-outgroup exposure condition, where they invested 63% of their endowment (p=0.07). Compared to PGG decisions recorded in other contexts, where contributions between 40% to 60% of the endowment have typically been observed [3], these figures indicate remarkably high levels of cooperation, especially in the high-outgroup condition. However, there is no evidence for elevated bias in villages surrounded by non-coethnics. Participants favoured co-villagers over neighbours to virtually the same degree in both the high- and the low-outgroup exposure condition, giving 7.9 and 8.0 pp more (1.12 and 1.14 times) to co-villagers (0.1 pp difference in bias, p=0.97). This is due to the fact that in the high-outgroup exposure condition, higher cooperation rates with coethnic co-villagers went along with similarly elevated levels of cooperation with non-coethnic neighbours, with participants spending 65% of their endowment in the PGG, compared to 55% in the low-outgroup exposure condition (p=0.25). This lack of elevated bias is discussed more in detail below.

With regard to the second element of parochial altruism, aggressive behaviour, levels appear to be higher in the high-outgroup exposure condition, although overall differences are not statistically significant. Participants in the high-outgroup exposure condition claimed 64% of their neighbour's endowment in the P-role of the threat game and made 10.6 pp (1.19 times) higher claims than when matched with co-villagers, while in the low-outgroup condition they claimed 57% (p=0.22), and showed less (6.1 pp, 1.12 times) bias (4.8 pp difference in bias, p=0.51). When considering within-person differences, however, clear differences between the exposure-conditions are visible: while in the low outgroup exposure condition there were no differences in aggressive behaviour towards either co-villagers or neighbours (p=0.36), in the high outgroup-exposure condition, individuals behaved clearly more aggressively towards their non-coethnic neighbours (p=0.001).

Theoretical models explain parochial altruism by the signalling value of group coherence to deter attacks [12], and with multilevel selection, whereby the negative individual fitness effects of heroic behaviour on the behalf of the group are overcompensated by the positive effects for the group [9]. According to the latter theory, intergroup conflict may have evolutionarily favoured parochial altruists that combine hostility to the outgroup with high levels of ingroup cooperation. We would thus expect to find a positive link between aggressive behaviour and cooperation at the individual level. The data at hand provides evidence for such a relationship. We can split the sample into aggressive individuals, who claim the median value of 10 MUs or more, and non-aggressive individuals who spend less than this amount. When subdividing the sample in this way, 57% of individuals in the low outgroup exposure condition qualify as aggressive, as compared to 67% in the high outgroup exposure condition. In line with the theoretical predictions, aggressive individuals overall invest somewhat more in the PGG with co-villagers, i.e. show a higher level of cooperation with ingroup members, although this differences does not reach conventional levels of significance (70% as compared to 64%, p= 0.13). They are, however, clearly more biased in favour of their co-villagers (13.3 pp bias as compared to -0.8 pp bias, p=0.04). This result is confirmed when looking at within-person comparisons: whereas non-aggressive individuals do not distinguish between co-villagers and neighbours (p=0.91), aggressive individuals are significantly more likely to favour their co-villagers (p=0.003).

The data thus provides support for the hypothesis that communities exposed to a threatening outgroup show parochial altruism. This finding contrasts with those of other field studies, which find no support for parochial altruism in a context of real-world intergroup conflict in Belfast, Northern Ireland [39, 40]. One possibility is that parochial altruism only develops in settings with high residential stability, as implied by the original model of Choi and Bowles [9]. Laboratory evidence shows that the option for free migration tends to suppress the cooperation-enhancing effect of intergroup conflict, potentially leading to smaller effects in urban as compared to rural areas [47]. In the current study, 61% of participants were born in the village where the experiment took place (35% of women and, due to a widely followed norm of patrilocality [48], 87% of men), which contrasts with the more fluid residential urban environment in which the cited studies were conducted. Residential stability may also explain the high overall cooperation rates observed [49].

High outgroup cooperation/lack of elevated bias As noted above, a surprising finding in light of current scholarship are the high rates of cooperation with non-coethnic neighbours in the high-outgroup exposure condition, and the concomitant lack of of elevated bias towards co-villagers. Here, two possible explanations for this novel finding are proposed. A first possibility is that outgroup cooperation serves to lower the probability of violent confrontation with neighbouring communities. In a context of weak institutional safeguards, it is possible for intergroup tensions to escalate into violence, which typically imposes high costs on all actors involved. One important reason for this, widely discussed in international relations theory, is the lack of information about the other groups' intentions, which can make escalation likely even if the actors involved would prefer to avoid violence [50, 51]. Cooperative offers can help to communicate generally peaceful intentions, serve as signals of a group's intentions about future investment in a relationship, and hence lower the risk of violent confrontation [52, 53]. Research in anthropology shows that groups, both friendly and hostile, dedicate themselves to reciprocal gift-exchange relationships ostensibly to stabilize inter-group relations, and confidence building measures between states serve a similar purpose [54, 55]. It follows that in a context of tense intergroup relations, threat may induce cooperation with an outgroup rather than deter it.

The relationship between spending on protection in the threat game, and cooperation with neighbours in the PGG, provides some support for this interpretation. In the low outgroup-exposure condition, where threat emanates from coethnics, there is a monotonic negative relationship between perceived threat (measured in terms of absolute spending on protection or bias) and above-average contributions in the PGG. This is the relationship we would expect to see based on previous research showing that fearful and distrustful individuals are typically also less cooperative [56]. In contrast, in the high-outgroup exposure condition, where threat emanates from non-coethnics, a more complex pattern arises, with participants who perceive high levels of threat from their neighbours also cooperating at high levels with them (Figure 3).

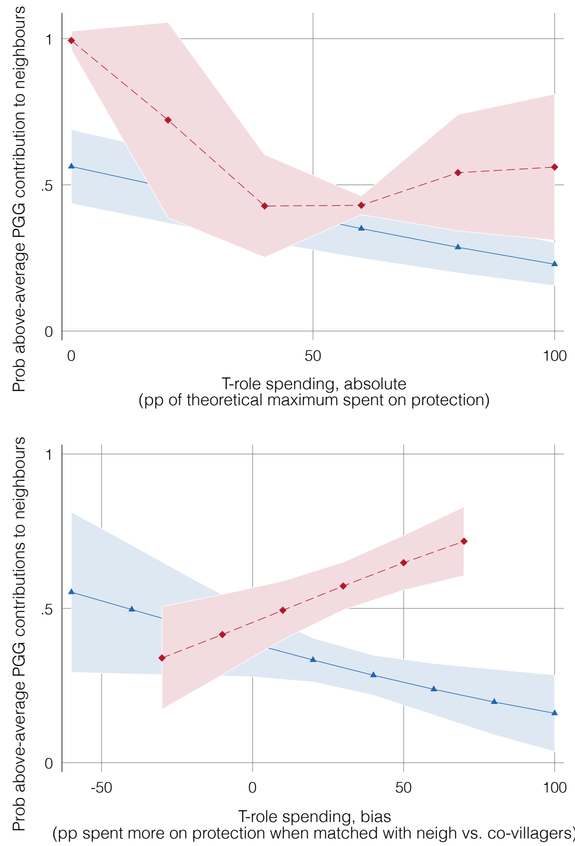

Figure 3: Probability of above-average contributions to neighbours in the PGG, depending on perceived threat as measured by T-role spending in the threat game in the low- (blue,△) as compared to the high- (red,◇) outgroup exposure condition. Marginal effects from logistic regression on first- and third-order (best-fit) polynomial of T-role spending and bias in T-role spending. Shaded areas are 95% confidence intervals, standard errors clustered at the village level.

A second possibility that could explain the simultaneous presence of parochial altruism and lack of elevated bias is that individuals, even if parochially inclined, do not want to forfeit the benefits of exchange with their neighbours. This idea parallels findings in international relations where countries have been observed to continue trading even while at war [57]. Trading is particularly profitable across group lines, as groups are often economically differently specialized [58–60]. In the case of the Kvemo Kartli region, ethnic Azerbaijanians often have better access to sought-after trading products from Turkey, whereas ethnic Georgians find it easier to access markets elsewhere in Georgia, offering opportunities for mutually beneficial exchange. Tentative evidence for the interpretation that participants likened cooperation in the PGG to trade when interacting with outgroup members is present in the data. In the post-game questionnaire, participants were asked whether they approved of their co-villagers doing business with individuals from neighbouring villages. In the ethnically homogenous sub-region, there was no association between approval for business exchanges and cooperation (b=-0.08, p=0.49), whereas in the high-outgroup exposure this association was substantial although not statistically significant (b=1.28, p=0.24).

While reciprocal exchange at first glance may seem at odds with parochial altruism, it may in fact be beneficial for individuals and communities to, at the same time, showcase aggressive behaviour to deter attacks while lowering tensions and keeping channels of exchange open by means of inter-group cooperation. The strategy of combining parochial altruism with high levels of intergroup cooperation implies that the redistributive effects of the aggressive behaviour are strongly reduced. In the games presented here, the losses for non-coethnic neighbours due to the parochial strategy adopted in the threat game were almost exactly compensated by the additional gains from the more cooperative stance in the PGG (-1.8MUs vs. 1.9MUs, p=0.59), so that coethnic and non-coethnic neighbours received virtually identical average payoffs.

4 Conclusion

The study presents evidence for parochial altruism in reaction to outgroup threat from a real-world setting. Parochial altruism is accompanied by high levels of outgroup cooperation/low levels of bias in a cooperation task. The latter result is novel and should be studied in more detail. The study is unique in that threat and aggressive behaviour were measured using dedicated behavioural games in a real-world setting. Owing to the complex data collection process, the sample sizes used are small (but comparable to other field studies of intergroup relations [38, 40]). The results obtained must therefore be interpreted with due care and should be replicated elsewhere. It should also be reiterated that this study was conducted in a context where intergroup relations are strained but overt violence is rare. On the one hand, it is interesting that even in this context, clear evidence for parochial altruism could be obtained. In a more hostile context we would arguably expect to find stronger results in this regard. It remains uncertain, however, whether the other core result, the lack of elevated ingroup bias, would hold up in such a context. The comparison to other studies further suggests that the results may be specific to contexts with high residential stability. Such contexts are arguably similar to the conditions under which human cooperative behaviour evolved and which has inspired theoretical models, but may become scarce in a 21st century marked by increasing urbanisation [61].

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Competing interests

I have no competing interests.

Ethics statement

The study design was approved by the European University Institute's Research Ethics Committee.

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Supplementary Information for 'Threat and parochialism in intergroup relations: lab-in-the-field evidence from rural Georgia'

Contents

Characteristics of the threat game

As outlined in the main text, the threat game is a bilateral game that provides a measure of aggressive behaviour when players take on the role of the potential predator or threatener, P, and a measure of fear of such aggressive behaviour when players take on the role of the threatened, T. Figure S1 details the payoffs for P and T, and Figure S2 provides examples of P/T interactions.

$$\text{Payoff P } (y, z) = \begin{cases} e + z - y & \text{if } z > y \\ e & \text{if } z \leq y \end{cases}$$

$$\text{Payoff T } (y, z) = \begin{cases} e - 2(z - y) - y & \text{if } z > y \\ e - 2z + y & \text{if } z > y \\ e - y & \text{if } z \leq y \end{cases}$$

with $z,y \in \{0,e\}$

z : amount claimed by P
y : amount spent by T on protection
e : initial endowment

Figure S1: Payoffs for P and T in the threat game

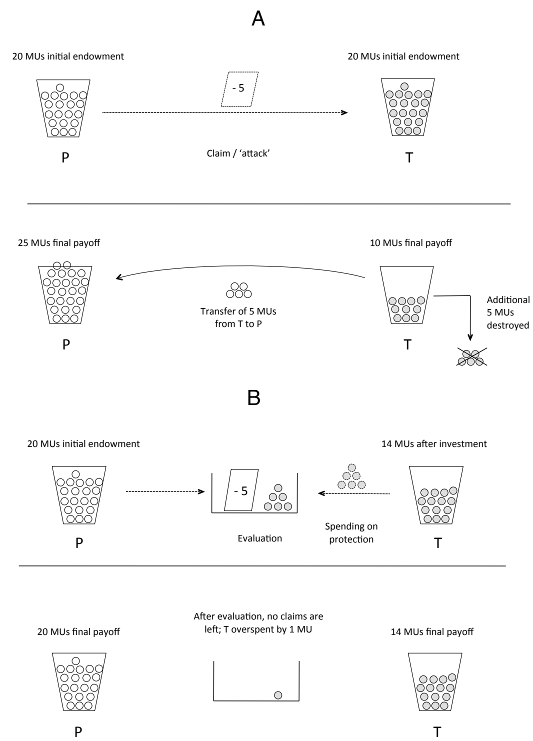

Figure S2: Payoff examples for the threat game. (A) shows payoffs for the potential predator or threatener P and the threatened T for the case that T does not spend on his protection. P claims and receives 5 MUs from T for a final payoff of 25 MUs. T consequently loses 5 MUs to P while another 5 MUs are 'destroyed' in the process so that T is left with a final payoff of 10 MUs. (B) shows payoffs for P and T when T slightly overspends on his protection. P claims 5 MUs from T. T spends 6 MUs on his protection. All claims by P are thus amortized so that she ends up with her initial endowment of 20 MUs as final payment. T does not lose to P, but the amount he spends on his protection is lost, so he ends up with a final payoff of 14 MUs. Note that this is a worse outcome compared to a situation where he had only spent 5 MUs on his protection, in which case T's final payoff would have been 15 MUs. T's outcome is considerably better, however, than if he had not spent on his protection at all, in which case he would be left with only 10 MUs final payoff.

The threat game has several advantageous properties. 1) As both players are initially endowed with an equal amount, there is no good motivation except for greed or predatory intentions on the side of P, and defensive behaviour or fear on the side of T for their respective decisions. P can only harm the other person. T can only protect himself, but his actions do not lower the baseline payment of P. Therefore, unlike in the dictator game, for instance, there is no role for inequality aversion as a motive. Nevertheless, the threat game reflects the power asymmetry inherent in many threatening situations. 2) For P, aggressive behaviour is completely risk-free, so that risk-aversion should not influence her decision. 3) For the threatened T, the incentive to spend on protection strictly rises in the expectation of threatening behaviour, i.e. threshold solutions are avoided. 4) For T, spending on protection is also always costly—the maximum amount that T can possibly earn is strictly decreasing in the amount T allocates to fend off claims. 5) The behaviour of P and T is collectively costly. That is, the 'blame' for 'burning money'—leaving money with the experimenter—is on both P and T. Each unit T spends on protection reduces the money in the game by 1; likewise, each unit P claims from T also automatically reduces the money in the game, no matter what the threatened does. 6) The optimal response to a given threat level also minimises differences in payoffs (so that the threatened T cannot do better in terms of minimising relative payoffs than to play the optimally 'safe' response), which means that a concern with relative gains should not distort findings.

If the threat game was played sequentially, its structure would resemble that of the widely employed trust game, with the threatened corresponding to the first player in the trust game (the truster, who places trust), and the predator to the second player in the trust game (the trustee, who chooses to honour the trust placed in him or not) [1].[1]

Summary statistics and regression results

This section reports the summary statistics and regression results referred to in the main text. Table S1 gives overall averages and the covariate balance between the high and the low outgroup-exposure condition. The reported values from the game decisions are raw values as recorded during the games. Table S2 shows regressions of the experimental decisions on the outgroup exposure variable simultaneously controlling for prior experimental decisions when matched with co-villagers/neighbours and the unbalanced covariate age and its square. These tables reproduce the findings reported in the main text. Table S3 reproduces the results using the share of outgroup members in the 5 closest villages instead of the dichotomous exposure measure as independent variable.

The covariates referred to in this section come from several sources. The population and share of ethnic outgroup members in neighbouring villages were taken from the 2002 Georgian census, which recorded these data for each village in the Kvemo Kartli region. Distance from Tbilisi and to the 5 closest neighbouring villages was calculated using GIS software. A respondent's age, gender, birthplace, education and monthly household income were recorded by means of a survey delivered before the experiments took place. The church attendance and trust measures were collected in a second survey delivered after the experiments had been conducted.

[1] I thank James Fearon for pointing this out.

Table S1: Comparison of villages with low and high exposure to outgroup members

	Av	*Low*	*High*	Δ	*p*
Village					
Share outgroup in 5 closest villages	0.52	0.24	0.80	−0.55	0.05
Pop in 5 closest villages in 100, 2002 cens	31.95	31.77	33.88	−2.11	0.51
Av dist to 5 closest neigh villages (km)	5.92	6.20	6.27	−0.07	0.83
Session					
Female	0.49	0.52	0.46	0.06	0.49
Age in years	45.71	49.30	42.03	7.27	0.01
Born in village	0.61	0.58	0.64	−0.06	0.44
Edu in years	12.96	12.89	13.03	−0.14	0.96
HH inc 100 GEL / month	5.20	5.19	5.21	−0.02	0.83
Freq church visits/month	2.58	2.33	2.85	−0.52	0.70
N particip session	23.84	24.13	23.55	0.58	0.31
Behavioural game decisions					
T-role spending (GEL), co-villagers	7.43	7.39	7.46	−0.07	0.66
T-role spending (GEL), neighbours	8.33	7.81	8.89	−1.12	0.03
PGG investments (GEL), co-villagers	6.77	6.28	7.29	−1.01	0.03
PGG investments (GEL), neighbours	5.97	5.53	6.42	−0.89	0.09
P-role spending (GEL), co-villagers	7.80	7.79	7.81	−0.02	0.97
P-role spending (GEL), neighbours	9.05	8.59	9.52	−0.93	0.18

P-values from two-sided Mann-Whitney U test.

As shown in Table S1, there were no statistically significant differences between the two conditions in terms of sex (49% female, p=0.49, two-sided Mann-Whitney U test), birthplace (61% born in village, p=0.44), education (12.9 y in kindergarten and school, p=0.96), and frequency of church attendance (2.6 times/month, p=0.70), although participants in the low exposure condition were on average somewhat older than those in the high outgroup-exposure condition (49.3 y, sd = 16.9 y, compared to 42.0 y, sd = 15.7 y, p=0.01). In both conditions, average household income was similar (520 GEL/month, p=0.83, two-sided Mann-Whitney U test), and similarly distributed (p=1.00, Kolmogorov-Smirnov test).

Table S2: Threat game and PGG decisions regressed on the binary measure of outgroup exposure

	(1) T-role spend, neigh	(2) PGG invest, co-villagers	(3) P-role spend, neigh	(4) Bias T-role spend	(5) Bias PGG invest	(6) Bias P-role claim
High outgroup exposure	7.19	9.99	8.46	5.48	−0.05	4.48
	(0.07)	(0.07)	(0.22)	(0.09)	(0.95)	(0.51)
PGG invest, neigh	−1.39		−1.14	−0.82		0.14
	(0.15)		(0.37)	(0.31)		(0.87)
P-role claim, neigh	1.10			0.06		
	(0.17)			(0.86)		
Age in years	0.09	0.18	0.15	−0.77	−1.17	0.97
	(0.88)	(0.80)	(0.85)	(0.31)	(0.62)	(0.22)
Square of age	−0.00	−0.00	0.00	0.00	0.01	−0.01
	(0.68)	(0.92)	(0.98)	(0.50)	(0.65)	(0.17)
Mistakes in quizzes	0.25	−0.07	−0.07	−0.02	−0.04	−0.07
	(0.00)	(0.64)	(0.00)	(0.62)	(0.72)	(0.34)
Constant	47.88	58.44	56.32	31.73	36.00	−9.72
	(0.03)	(0.10)	(0.13)	(0.07)	(0.53)	(0.55)
Observations	140	140	140	140	140	140
AIC	1274.82	1360.45	1378.36	220.37	262.36	267.50

Regression of measures of threat perception (T-role spending), cooperation (PGG investments) and aggressive behaviour (P-role claims) the binary measure of outgroup exposure. Columns 1–3 report regressions of total possible MUs spent/claimed in the PGG and threat game on the binary measure for outgroup exposure, and columns 4–6 show regressions of bias in T-role spending, PGG investments and P-role claims on outgroup exposure. Bias is defined as the percentage point difference when matched with co-villagers as compared to neighbours. The dependent variables are the percentage-point bias *favouring* co-villagers for cooperation, and bias *against* neighbours for threat and aggression. Wild cluster bootstrap regression, resampling at the village level, 5,000 repetitions. Figure 2 in the main text graphically presents these results. P-values in parentheses.

Table S3: Threat game and PGG decisions regressed on the share of outgroup members in neighbouring villages

	(1) T-role spend, neigh	(2) PGG invest, co-villagers	(3) P-role spend, neigh	(4) Bias T-role spend	(5) Bias PGG invest	(6) Bias P-role claim
Share outgroup in neighb	11.94	16.68	9.99	9.06	−3.27	1.28
	(0.07)	(0.06)	(0.41)	(0.14)	(0.70)	(0.88)
PGG invest, neigh	−1.39		−1.09	−0.83		0.22
	(0.12)		(0.40)	(0.80)		(0.87)
P-role claim, neigh	1.13			0.08		
	(0.19)			(0.85)		
Age in years	0.12	0.21	0.18	−0.75	−1.16	0.99
	(0.81)	(0.81)	(0.87)	(0.37)	(0.63)	(0.21)
Square of age	−0.00	−0.00	−0.00	0.00	0.01	−0.01
	(0.61)	(0.91)	(0.98)	(0.56)	(0.66)	(0.12)
Mistakes in quizzes	0.25	−0.07	−0.07	−0.02	−0.04	−0.07
	(0.00)	(0.62)	(0.00)	(0.69)	(0.72)	(0.37)
Constant	44.74	54.44	55.03	29.36	37.74	−8.40
	(0.06)	(0.12)	(0.12)	(0.13)	(0.51)	(0.63)
Observations	140	140	140	140	140	140
AIC	1275.23	1360.86	1379.62	1312.73	1406.83	1388.78

Regression of measures of threat perception (T-role spending), cooperation (PGG investments) and aggressive behaviour (P-role claims) on the share of outgroup members in neighbouring villages. Columns 1–3 report regressions of total possible MUs spent/claimed in the PGG and threat game on outgroup share, and columns 4–6 show regressions of bias in T-role spending, PGG investments and P-role claims on outgroup share. Bias is defined as the percentage point difference when matched with co-villagers as compared to neighbours. The dependent variables are the percentage-point bias *favouring* co-villagers for cooperation, and bias *against* neighbours for threat and aggression. Wild cluster bootstrap regression, resampling at the village level, 5,000 repetitions. Figure 2 in the main text graphically presents these results. P-values in parentheses.

Selection of research site and procedures

Research was conducted in summer 2015 by a team consisting of the author and two local research assistants. Before the beginning of the field research, the study design was approved by the European University Institute's Research Ethics Committee. To test whether outgroup exposure goes along with ingroup cooperation, the aim was to identify a context where, in a compact geographical area, there is variation in the exposure to an ethnic 'outgroup'. In the search for an appropriate research site, a range of multi-ethnic countries were considered. Several of the potential choices had seen violent conflict, however, which often went along with a change of settlement patterns, reinforced segregation along ethnic lines and other confounders. Therefore, a context was to be chosen where settlement patterns of ethnic groups in space were relatively stable. Moreover, the sampling strategy would rely on access to detailed demographic information that could be used to calculate, for any given village, the share of ethnic outsiders in the vicinity. With these criteria in mind, Georgia was eventually chosen as a research site, which had the additional advantage that the author was already somewhat familiar with the regional context from previous work experience in neighbouring Armenia. Georgia is remarkably ethnically diverse, as can be seen in Table S4, which gives population breakdowns by ethnic group for the country as a whole and for the different regions, and in Figure S3, which shows the distribution of the different ethnic groups in space.[1]

[1]The map is made available by the European Centre for Minority Issues (ECMI) on their website `http://www.ecmicaucasus.org/menu/info_maps.html` (last checked on 27 Jan 2017).

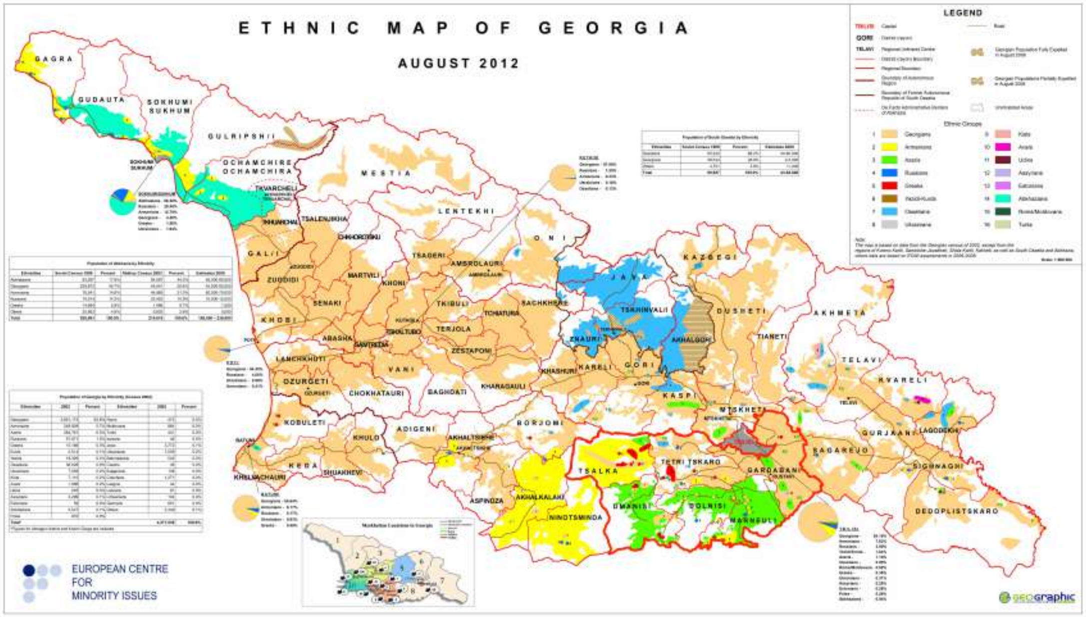

Figure S3: Ethnic composition of Georgia, Kvemo Kartli region marked with bold outline

The three largest ethnic groups in Georgia – Georgians, Azerbaijanis and Armenians – all look back on a long settlement history in the Kvemo Kartli region. The region is considered part of the Georgian heartland, where Georgian presence has been documented since classical antiquity [2]. The ethnic Azerbaijani population of Georgia dates back to the Persian conquests of the region during the 16th century, in the wake of which tribal people from Safavid Iran were settled in the Kvemo Kartli region to stabilize the rule of the area [3]. Most of the ethnic Armenians living in Georgia originate from the province of Erzurum in the Ottoman Empire, from where they had fled to Georgia, then part of the Russian empire, in search of greater cultural autonomy during the 19th century [4].

The aim of the village selection strategy was to identify villages that were as similar as possible with regard to qualities that potentially influence cooperative behaviour, save for their degree of exposure to ethnic outsiders, measured as the share of non-Georgians in the 5 closest villages. The sampled villages were 1) ethnically homogeneously Georgian, in order to minimize the relevance of cultural differences as an explanatory factor [5]; 2) located at a distance of 20km or more from the capital, Tbilisi, so to avoid comparing rural villages with suburban settlements; 3) were long-established (the youngest village in the sample was founded 3 generations ago); and 4) were relatively small in size, with under 1000 inhabitants, so to allow for community relations to be regulated largely based on face-to-face contact [6]. Excluding minor hamlets and larger towns, there are 214 villages in the Kvemo Kartli region, 69 of

Table S4: Ethnic composition of the Kvemo Kartli region 2002

Municipality	Total	Georgians	Abkhazians	Ossetians	Armenians	Russians	Azerbaijanis	Greeks	Ukrainians	Kists	Yezids
Rustavi City	116,384	102,151	44	1,410	2,809	3,563	4,993	257	395	15	293
Bolnisi	74,301	19,926	35	80	4,316	414	49,026	438	14	-	-
Gardabani	114,348	60,832	48	412	1,060	994	49,993	236	65	6	162
Dmanisi	28,034	8,759	9	12	147	156	18,716	218	7	-	-
Marneuli	118,221	9,503	29	47	9,329	523	98,245	396	29	1	6
Tetri Tskaro	25,354	18,769	16	205	2,632	689	1,641	1,281	14	-	-
Tsalka	20,888	2,510	2	18	11,484	125	1,992	4,589	3	-	2
Kvemo Kartli	497,530	222,450	183	2,184	31,777	6,464	224,606	7,415	527	22	463
%		44.71	0.04	0.44	6.39	1.30	45.14	1.49	0.11	0.00	0.09
Georgia	4,371,535	3,661,173	3,527	38,028	248,929	67,671	284,761	15,166	7,039	7,110	18,329
%		83.75	0.08	0.87	5.69	1.55	6.51	0.35	0.16	0.16	0.42

Table S4 shows the absolute numbers and %-shares of ethnic Georgians and Georgian citizens of another ethnicity in the Kvemo Kartli region and Georgia in 2002. The data comes from the 2002 census conducted by the National Statistics Office of Georgia (Geostat).

which can be considered as Georgian in the sense that at least 75% of the population self-identified as ethnic Georgian in the 2002 census. Of these, 10 villages matched the criteria. Inhabitants in all 10 villages communicated a willingness to take part in the experiments during an initial visit, but 4 villages had to be discarded as they did not have appropriate facilities (a school or community centre providing enough seating for 20–30 participants) to conduct the experiments in, leaving me with the final sample of 6 villages. In each village, 20 to 28 participants were recruited.

For each village, the 5 closest neighbouring villages were then determined using GIS software. Using the information on the ethnic composition of these villages and population figures, the share of non-Georgians in the population of the neighbouring villages was calculated. These shares are shown in Figure S4 for all Georgian villages in the Kvemo Kartli region. Villages where lab-in-the-field sessions were conducted are marked in red (high outgroup-exposure condition) and blue (low outgroup-exposure condition). The remaining villages were not selected for conducting experiments because they either have more than 1000 inhabitants (grey) or are located very close to the capital, Tbilisi (yellow).

Another class of villages not selected for conducting experiments, marked in green, are newly founded villages with a distinct demographic profile. Since the late 1980s, successive Georgian governments, aided by private foundations, have funded the resettlement of ethnic Georgians from ecologically volatile regions to the Kvemo Kartli region. These so-called 'eco-migrants' largely hail from the mountainous parts of Adjara region, in the south-west of the country, or from the likewise mountainous Svaneti region in north-western Georgia. The fact that the 'ecomigrants' have been settled largely amid ethnic minority settlements has raised concerns among minority representatives that the true motive behind

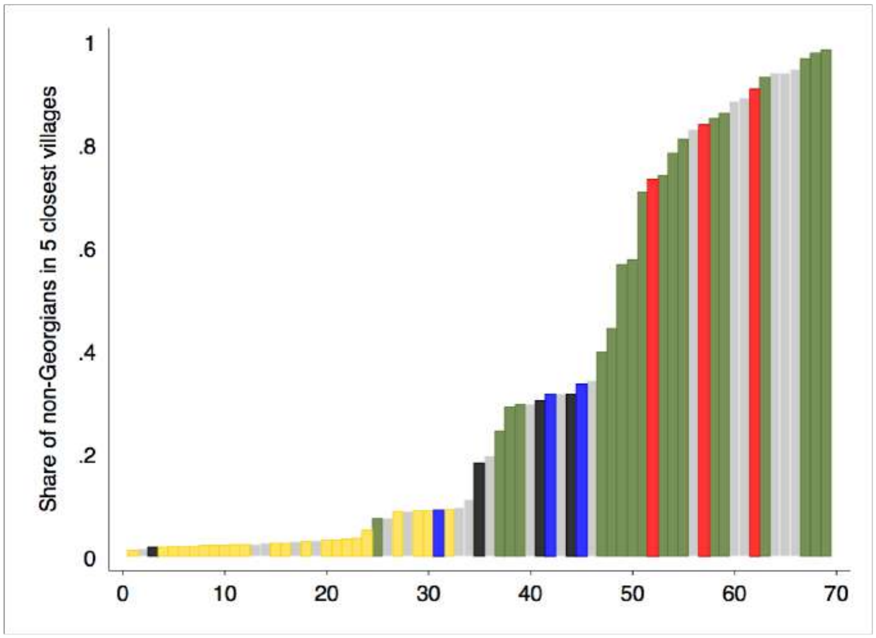

Figure S4: Georgian villages in the Kvemo Kartli region by share of non-Georgians in 5 closest villages; villages with lab-in-the-field sessions are marked in blue (low outgroup-exposure villages) and red (high outgroup-exposure villages); villages that were visited, but could not offer the necessary facilities are marked in black; villages populated by 'economigrants' are marked in green; villages close to the capital city Tbilisi are marked in yellow; villages with over 1000 inhabitants are marked in grey.

the resettlement programmes is the 'Georgification' of regions with high minority presence [7]. Finally, four villages were so small so that they could not offer a venue for conducting the experiments. These are marked in black.

Recruitment of participants

For the recruitment of participants and the conduct of the experimental sessions, we worked in a team of three, including the author and two research assistants. As mentioned, we initially visited 10 villages to ask about villagers' willingness to take part in the research project and check for the availability of an appropriate venue in which to conduct the experiments. In all villages, people communicated their willingness to take part, but we had to discard 4 villages as they did not have appropriate facilities in which to conduct the experiments.

Within each village, two to three individuals would assist in organizing the sessions. These typically included the director of the school and/or the village leader, the *Gamgebeli.* Although the resulting sample is not a random sample of the respective village population, we urged our contact persons to balance participants according to sex, age and social background. In general, we attempted to stratify both the sessions and overall sample according to the distribution of sex and average age of the Georgian population as a whole. In Georgia in 2013, 52% of the population was female and 48% male. The average age of the population eligible to take part in the experiments (over 18 year of age), was 46.5 years [8]. This stratification worked out relatively well: the average age in the sample was 45.7 years, and 49.3% of participants were female. Participation in the experiments was restricted to a maximum of two persons per household. The latter restriction to two instead of one person per household was necessary to ensure equal representation of women, who in Georgia may in some cases only take part in public events in the company of a male relative.

Session procedures

The experimental sessions were conducted in local school buildings (in 5 cases) or in the building of the local municipality (1 case). All sessions were conducted by the same two research assistants in Georgian language. Upon entering the room, participants were randomly allocated a seat by drawing a number, which was also used for identification purposes during the session. Participants were given a 5-Lari show-up fee and a consent form, and the purpose of the experiment was explained to them. After giving their written consent, participants answered to a short survey, which served to record the individual-level covariates (gender, age, household income, place of birth within/outside village). Participants then worked on the experimental tasks. The research assistants gave instructions, following a pre-prepared script. The script had been translated and back-translated from English into Georgian and had been pre-tested in several trial sessions. To facilitate understanding of the PGG and threat game, we explained the possible choices and payoffs using tools made from acrylic glass and wooden balls. Fig. S5 shows the use of the tools during an experimental session.

Before making an actual decision, each participant answered a quiz, in which they were asked to calculate hypothetical payoffs. Participants then communicated their game decision by writing on designated paper slips. All answers were recorded on paper and manually entered into a computer (Fig. S7). During decision-making, participants used cardboard separators to ensure their privacy (Fig. S6). At the end of the session, participants were paid individually and in private. As stated in the main text, sessions lasted 90–120 min and on average participants earned 18 Georgian Lari (about USD 8/Euros 7), 80% of the average daily wage of an employee in agriculture or education.

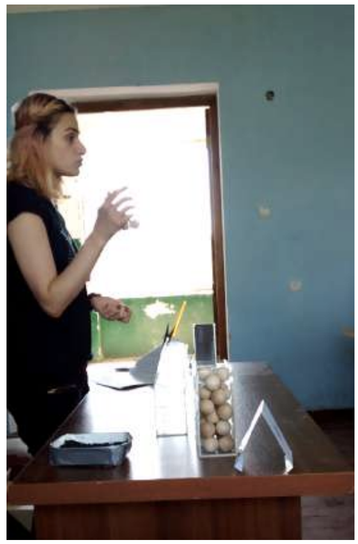

Figure S5: Demonstration of payoffs in the threat game using wooden balls and tools made from acrylic glass during one of the experimental sessions

Figure S6: Decisions recorded on paper being entered into the computer

Figure S7: Use of cardboard separators during experimental session

Experimental script

The draft experimental script and surveys were tested in two trial sessions held in English among student participants to ensure comprehensibility of the procedures. The two research assistants then translated the resulting drafts from English into Georgian. The translated script was translated back from Georgian into English by a trained translator, and discrepancies were discussed and corrected, where necessary. The resulting Georgian draft and translated surveys were again tested in two trial sessions, the first conducted with students at Ilia State University in Tbilisi, and the second among villagers, allowing the testing of all procedures. The resulting final script and surveys were used unaltered throughout the six lab-in-the-field sessions. Here a shortened version is presented, not repeating instructions for the ingroup and outgroup conditions (which are almost identical) and leaving out numerical examples.

General instructions

Thank you very much for taking part in this experiment in which you will be earning some money. We are interested in your decisions and in the questions we ask you, not in your personal identity. Everything you do is anonymous. We do not and will not know your name. All we need to know is the number you drew yourself when you came in. In all the decision tasks, you will be deciding about real money. During the sessions, we will use these balls to represent the money you can earn. The exact amount you earn will depend on the decisions made during the decision tasks. Participation in this research is voluntary. If you feel uncomfortable at any point during the session, you are free to leave. We would like to ask you to read and, if you agree, sign the consent form that you find in the envelope that we gave you. To ensure anonymity, please use your initials to sign. Please do not write your participant number on the form.

Matching with other players

The first decision tasks involve groups of three; so you will decide in parallel with two other people. The group of three you are deciding in consists of you and two randomly chosen people from this room. The process of matching you with the two others works like a lottery. All your participant numbers are put in a box, mixed, and then the groups are formed by drawing three numbers at a time [put numbers in box, mix and draw three numbers]. So in this case the first group would consist of participant number [xxx], participant number [xxx] and participant number [xxx], the second group would consist of participant [xxx], participant [xxx] and participant [xxx] and so on. Note that these are only examples—the real group of three that you will be deciding in will likely be different. [Alternatively,] the group of three you are deciding in consists of you and two randomly chosen people from your neighbouring villages. For our research project, we conducted or plan to conduct the same experiments that you are working on at the moment in several of your neighbouring villages. These are the villages of [list of five closest neighbouring villages]. Just as in this village, we assigned numbers to the participants in the neighbouring villages that took part in the experiment. In order to speed things up, we let the computer do the assignment of people in groups of three. However, the process is the same, and we cannot influence it [...].

PGG

We will now start with the first decision task. I will first explain the task, then we do a small quiz, and then you take your decisions for which you will be paid. The three glasses with the Balls represent the personal accounts of the three members of your group. One of these accounts is yours, and the other two belong to the two other people in your group. For this task, you are each given ten Balls. In this decision task, you decide i) how much money you keep for yourself, from 0 to 10 , and/or ii) how much money to give to a group project, represented by this box here—again from 0 to 10. The money you keep is yours directly. The money you give to the group project is doubled by us, and the amount will be divided equally among the group members, and your earnings will also be paid to you at the end of the experiment. You will be paid both your share of the group project, and any money you kept in your account, at the end of the experiment—once you have completed all tasks.[...] Let us now do a short quiz. This will help you to do your decision in a more informed manner. We'll hand you out a sheet with a few questions. Please raise your hand if you need help with solving the quiz exercises.

> Quiz [PGG]. Please choose the correct answer: (1) If I give nothing (0 balls), the second member of my group gives 5 balls, and the third member gives 10 Balls I receive: □ 0 Balls, □ 15 Balls, □ 20 Balls; (2) If I give 8 Balls, the second member of my group gives 7 Balls, and the third member gives nothing (0 Balls), I receive: □ 4 Balls, □ 12 Balls, □ 17 Balls; (3) If I give 10 balls, the second member of my group gives 0 Balls and the third member also gives 0 Balls, I receive: □ about 3 Balls, □ about 7 Balls, 10 Balls.

Threat game

In the next two decision tasks, you will decide in pairs. In the decision situations there are two roles, A and B. In short, in this task A decides how many Balls to take from B. B is passive and cannot do anything. As you can see, A and B receive 20 Balls each for this task. In your role as A, your account with the 20 Balls in is secure. You will therefore earn 20 Balls for sure. All you have to do as A is to decide if you want to take Balls from B to further add to your account. You can decide to take nothing, or you can decide to take any number of Balls from B. Whenever you take a Ball from B, you also destroy an additional Ball in the process, however. So if you take 5 Balls from B, for example, you actually cause him a loss of 10 Balls. Let us demonstrate this with the Balls representing your money, the boxes representing your accounts and this panel tool here [the tool referred to above], which we use to explain the rules of the decision task. When interacting with a person from a neighbouring village, the exact same rules apply [...].

> Quiz [Threat game, P-role]. Please choose the correct answer: (1) If as A I take 0 Balls, the person I am paired with is left with: □ 10 Balls, □ 15 Balls, □ 20 Balls; (2) If as A I take 7 Balls, the person B I am paired with is left with: □ 20 Balls, □ 14 Balls, □ 6 Balls; (3) If as

A I take 12 Balls, the person B I am paired with is left with: □ -10 Balls, □ -4 Balls, □ 0 Balls.

As B, you cannot take Balls from A. However, you can prevent A from taking money from you by spending Balls on protection. The best you can do is to spend as much on protection as you expect the person you are paired with to take. So if you think that person will take 10 Balls from you, you should spend 10 Balls on protection; if you think the person will take 5 Balls, you should spend 5 Balls, and if you think the person will not take anything, the best you can do is not to spend anything on protection either. Let us explain to you why this is so—why it is best for you to spend exactly the number of Balls on protection that you expect the person you are paired with to take. We use this panel tool to explain this. Remember that when A takes 5 Balls, you as B lose 10 Balls—you lose 5 Balls to A, and the 5 Balls that are destroyed by A in the process. Let us see what happens if you spend 5 Balls on protection. When you spend 5 Balls before A comes to take them, the rest of your money is saved, so you take home 15 Balls, which is better than the 10 you would be left with when you did not spend anything on protection. But let's also consider the situation that A actually doesn't want to take Balls from you as B. In this case, you would have wasted 5 Balls on protection. You could have had 20 Balls, but now you are left with only 15. So in this situation it would have been better if you hadn't spent any Balls on protection [...].

Quiz [Threat game, T-role]. Please choose the correct answer: (1) If A tries to take 8 Balls from me, and I as B spend 8 Balls on protection, I will be left with: □ 4 Balls, □ 12 Balls, □ 18 Balls; (2) If A tries to take 7 Balls from me, I as B earn the most if I spend on protection: □ 7 Balls, □ 10 Balls, □ 13 Balls; (3) If A tries to take 5 Balls from me, and I as B spend 8 Balls on protection, I will be left with more, less or the same number of Balls compared to a situation where I had spent 5 Balls on protection? □ more, □ less, □ the same.

Please now turn around your decision sheet, and write down how many Balls you want to spend on protection.

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