Casual Physical Contact and Outgroup Bias: Experimental Evidence from Afghanistan[∞]

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Abstract

We show experimentally that contact between ethnic groups in a post-conflict society under sub-optimal conditions can increase ethnic bias. Day laborers in Kabul, Afghanistan, were equally altruistic toward their in-group and their out-group when out-group members were not physically present. When out-group members were physically present in an environment where no guidance for interaction or explicit incentives for cooperation were given, out-group altruism began to decrease in time among those who do not speak the out-group's language. This suggests that the inter-ethnic interaction does not automatically improve ethnic relationships, and more attention needs to be paid to the environment where it occurs.

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A rich theoretical and empirical literature posits that individuals show a strong tendency to favor in-group members over out-group members in their economic and political decision-making. This trend is reflected in theories explaining preferences over income redistribution (Klor and Shayo 2010, Shayo 2009), inadequate public goods provision (Alesina and La Ferrara 2000), voting behavior (Chandra 2004, Posner 2005), and longer and more recurrent civil conflicts (Bhavnani and Miodownik 2009, Denny and Walter 2014). But what is the driving force behind these biases? Two broad explanations are offered in the literature. The first assumes that an individual cares only about his own payoff, and identifies with a particular group for materialist, instrumental reasons, such as to enhance his ability to compete for resources (Bates 1983) or to ensure others' cooperation (Fearon and Laitin 1996). While recognizing the importance of such factors, scholars such as Sambanis and Shayo (2013), who observe variation in ethnic conflict across places with seemingly similar instrumental considerations (e.g., income, resources, and even ethnic fractionalization), offer a second, non-material, motivation. They argue that emotional attachment or antipathy toward a group, which may arise out of perceived similarities and differences, leads individuals to care about the welfare of others in that group. Understanding this psychological mechanism is crucial since it implies that in-group biases can persist even after instrumental reasons for discrimination have been removed.

This article sheds light on the role of other-regarding preferences in ethnic bias through a giving experiment in Kabul, Afghanistan. Scholars have long turned to experiments to study ethnic biases in order to explore the instrumental, self-regarding channel using strategic games (e.g., as in the trust game or the public goods game) and to isolate the psychological, other-regarding channel through giving games (such as in the anonymous dictator game, where subjects' complete control over their payoffs allows their decisions to reflect their concerns for others' welfare). Surprisingly, there has been weak evidence reported for the latter channel: subjects are as altruistic toward non-coethnics

as they are toward coethnics in both charitable giving games (Fong and Luttmer 2009, 2011) and anonymous dictator games, even when the same subjects discriminate in trust games (Fershtman and Gneezy 2001, Habyarimana et al. 2007). Perhaps even more unexpected, in post-conflict settings characterized by historic interethnic rivalry – where perceptions of ethnic difference are likely to be particularly strong (Mironova and Whitt 2016b, Sambanis and Shayo 2013) – experiments have found surprisingly little evidence of in-group bias (e.g., Whitt 2014, Whitt and Wilson 2007), and even unearthed evidence of out-group favoritism (Bettencourt et al. 2001).

Why is there such weak support for the psychological channel? Our investigation on how the physical presence of a dominant ethnic group affects group identification among ethnic minorities suggests that we look at the discrepancies between the setting in which ethnic bias is studied experimentally and the context in which emotions arise and affect these biases in the real world. Sambanis and Shayo (2013) assert that ethnic identification involves balancing the desire to identify with a higher-status ethnic group against an assessment of one's salient similarities with (and differences from) that group. While experiments often utilize descriptive social identity cues such as names and photos, everyday interethnic interaction in the real world often happens in person. Such interaction is also often undirected, involuntary, and relatively short in duration. For example, while waiting for the bus or transacting business in a market, individuals are exposed to a continuum of visible (e.g., skin color) and non-visible (e.g., accent) descent-based attributes (Chandra 2006, Horowitz 1985) of non-coethnics, even in the absence of direct engagement or conversation.[1] We argue that these attributes (e.g. sounds, scents, expressions) may affect social identification by serving

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[1] In theory, physical exposure allows for positive interactions that can reduce interethnic prejudice (Allport 1954); however, when interactions are not directed, individuals may not interact positively (or at all).

as sensory stimuli to the brain, which then assesses familiarity and belonging. These neurobiological roots (Dalgleish 2004) have been noted by others studying in-group bias, particularly in connection with parochial altruism and implicit racial bias (Whitt 2014, Bertrand and Duflo 2017). Past experience with the stimuli (Damasio 1994) and the intensity of exposure to them (Metcalfe and Mischel 1999) moderate the likelihood that an individual will respond impulsively, which may partly explain why in-group bias is both dynamic and persistent. The absence of these sensory stimuli in commonly studied out-group cues (e.g., photographs, textual description) may explain why the psychological mechanism has been difficult to establish empirically.

Motivated by the central political challenge of reconciling former enemies in post-conflict societies (Gibson 2004) and the burgeoning experimental literature on interethnic dynamics in post-war contexts (Mironova and Whitt 2014, 2016a, b, Whitt 2014, Whitt and Wilson 2007), we test the link between the psychological channel of ethnic in-group bias and physical exposure to non-coethnics in Afghanistan. The majority Pashtun ethnic group – identified by their customs, dress, and language (Pashto) – has historically dominated Afghanistan's politics and culture. In the civil war that raged in the 1990s along ethnic lines, the Pashtuns were perceived as using violence to retain their dominance over non-Pashtun, Dari-speaking minorities (Barfield 2010). Our study focuses on non-Pashtun minorities' altruism toward the dominant Pashtun majority about 20 years later.

In our experiment, non-Pashtun subjects have the opportunity to give anonymously to a branch of a hospital under one of three treatments: (1) *In(-group),* where the branch is in the (non-Pashtun) Panjshir province, and (2) *Out(-group)* and (3) *Out(-group with) Physical (Exposure),* where the branch is in the Pashtun-dominated Helmand province. Subjects in the *In* and *Out* groups waited for the experiment only with other non-Pashtuns, while subjects in *Out-Physical* waited alongside both Pashtuns and non-Pashtuns. Interaction in all treatments was left entirely to the discretion of the subjects, as it would be in real life, and subjects were called into the experiment in random order,

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creating exogenous variation in the duration of physical exposure. Subjects gave similarly in the *In* and *Out* groups, but reduced their giving by 25% in *Out-Physical.* Furthermore, we find that the reduced giving in the *Out-Physical* group was driven by subjects who were randomly assigned to a longer wait alongside out-group members, which is consistent with research associating the intensity of the reaction with the strength of the stimuli.

If the difference between in-group and out-group giving in *In* and *Out-Physical* was due to emotional arousal (i.e., a psychological mechanism), then it would be tied to out-group stimuli that are present in *Out-Physical* but are missing from *Out,* and concentrated only among those who perceive the stimuli as threatening. Knowing that Pashtuns speak Pashto, and did so while waiting to be enumerated, we reason that the presence of spoken Pashto in *Out-Physical* would induce more discomfort among non-Pashtuns who do not speak Pashto. Our results indeed show that while *Out-Physical* did not decrease donations relative to giving in *In* among non-Pashtuns who speak Pashto, donations in that treatment condition dropped by more than 40% among non-Pashtuns who do not speak Pashto, especially after longer exposure to spoken Pashto. We also utilize this exploration of heterogeneous treatment effects to examine other potential drivers of behavior in the experiment, such as subjects' previous integration with Pashtuns and the possibility of free-riding. We find evidence to support only one of the several alternative mechanisms tested: non-Pashtuns who speak Pashto donate more to Pashtuns than non-Pashtuns who do not speak Pashto, and even exhibit out-group favoritism in *Out.* This inherent heightened altruism toward Pashtuns suggests that non-Pashtun Pashto speakers are better integrated with Pashtuns; it supports Alexander and Christia's (2011) finding that previous experience of integration enhances intergroup cooperation.

We make four main contributions to the literature. First, we provide evidence of what Sambanis and Shayo (2013) refer to as non-materialist, psychologically motivated in-group bias. Second, we show that the psychological mechanism for ethnic bias is heightened in the presence of non-

coethnics. Third, our findings suggest that, at least among ethnic minorities in post-conflict settings, sensory stimuli in everyday interactions (such as the sound of the dominant group's language) can highlight differences across ethnic lines and affect group identification. This suggests the need to consider how individuals perceive the multitude of visible and non-visible descent-based attributes presented in real-world interethnic interaction and explore the neurobiology of some behaviors – especially actions that relate to threats and survival. Finally, our findings provide an individual-level view that may be useful for debates on whether ethnic groups should be geographically integrated or partitioned following violent ethnic conflicts (cf. Whitt 2014, Kaufmann 1996). Those who can speak the language of the group with which they were formerly in conflict appear unperturbed when members of the group are physically present, perhaps due to positive past interactions with the out-group. However, those who do not speak the language appear to react negatively, suggesting that at least initially, some guidance in navigating an interethnic environment may be necessary for them.

Several features of our experiment increase confidence in the internal and external validity of the results. Since social identification depends on the relative status of ethnic groups and past experience of conflict (Sambanis and Shayo 2013), it is important that the study is conducted in a country with politically unequal groups and a history of conflict. Afghanistan fulfills these criteria. We draw our sample from the population whose behavior we are interested in studying: ethnic minorities with low income and education. We cooperate with a charity well known to Afghans to design our lab-in-the-field experiment around charitable giving, an activity that is natural and familiar to our subject pool. Our social environment treatments leave subjects to wait with others, as they would in everyday life, such as while waiting to vote or to receive services, allowing dynamics that may be missing in directed interactions to emerge. These features strengthen confidence in the

applicability of our findings to everyday life in Afghanistan and to other contexts characterized by a history of interethnic violence.[2]

Psychology of Physical Interaction

Though both psychological and instrumental mechanisms for coethnic bias have received attention in the literature, models and empirical work have focused more heavily on the latter, in which in-group bias arises out of concern for one's own material payoff.[3] However, features such as variation in conflict across countries that have similar underlying risk factors for civil war (Kaufman 2006, 206) and the fluidity and dynamism of ethnic identification in various political contexts (e.g., Chandra (2004, 9-11)) suggest the need to continue examining psychological factors. Concerns for others' welfare appear to arise out of assessment of similarity and belonging. Tajfel and Turner (1979) showed that emphasizing trivial in-group similarities and out-group differences in arbitrarily formed groups is enough to induce in-group bias. This desire for group-derived status and esteem also plays a central role in Donald Horowitz's (1985) social-psychological theory of identification.

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[2] For example, Wimmer, Cederman, and Min (2009) code 51% of civil wars since 1946 as "ethnic", fought over ethnonational self-determination, ethnoregional autonomy, language or cultural rights.

[3] Examples of work in this vein include Bates (1983), Fearon (1999), Posner (2005), and Laitin (1998). Sambanis and Shayo (2013, 299) note that "[in many studies] the psychological mechanism is simply assumed away." Following Sambanis and Shayo (2013), we equate "non-instrumental" with psychological/non-material benefits, including instances where concern for others' welfare is driven by one's desire for psychic benefits. This contrasts with work such as Chandra (2004), which characterizes this motivation as instrumental (in the sense that such actors are instrumentally rational).

However, experimental evidence for the psychological mechanism has been surprisingly weak, even in post-conflict environments, where violence is likely to strengthen emotions surrounding ethnic identification (Mironova and Whitt 2016b, Sambanis and Shayo 2013).[4] Experiments that are designed to isolate this channel generally employ anonymous giving decisions, thus eliminating strategic concerns that affect one's monetary payoff.[5] Ethnic identity in such experiments is usually cued in one of three ways: photographs, ethnically identifiable names, or clearly indicating a person or group's ethnicity. For example, in a charitable giving experiment, Fong and Luttmer (2009, 2011) find that photographs that revealed the recipients' race had no effect on the size of subjects' contributions to victims of Hurricane Katrina. Habyarimana et al.'s (2007) use of photographs to cue ethnicity in their lab-in-the-field experiment in Ugandan slums also finds no evidence of discrimination in offers made in dictator games, despite finding it in trust games. Similar results were observed with the use of Eastern and Ashkenazi Jewish surnames in Fershtman and Gneezy (2001). Finally, even though there is evidence of in-group bias in such giving games in post-conflict contexts, it is often weaker than expected (Whitt 2014, Whitt and Wilson 2007), and out-group favoritism has even been observed (see Bettencourt et al. 2001). What explains this disconnect?

Evidence from multiple literatures suggests that negative emotions toward other ethnic groups do not arise in a vacuum, but rather through contact and interaction with non-coethnics. This is reflected in the negative association between ethnic mixing and barometers of relationships, including participation in social activities (Alesina and La Ferrara 2000), community trust (Alesina

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[4] Chaim Kaufmann (1996, 137) argues that "restoring civil politics in multi-ethnic states shattered by war is impossible because the war itself destroys the possibilities for ethnic cooperation."

[5] Such games have been used extensively to study how altruism varies by characteristics of the recipient, including ethnicity (see review in Chen and Li (2009)).

and LaFerrara 2002, Putnam 2007), charitable giving (Andreoni et al. 2016), and public goods provision (Alesina, Baqir, and Easterly 1999). However, meta-studies of the contact hypothesis[6] appear to indicate that contact generally has a *positive* effect on attitudes toward the out-group (Pettigrew and Tropp 2006), even in settings characterized by a history of interethnic violence like the one we study here (e.g., Kasara 2013, Mironova and Whitt 2014). Enos (2014) points out that the vast majority of studies on the contact hypothesis are observational in nature (Pettigrew and Tropp 2006) and can therefore suffer from selection problems (Pettigrew 1998), while experiments often feature directed or very specific types of interaction.[7] Thus he asserts that we do not know how people will react to increased casual, everyday contact.

To summarize, why has the evidence for the emotional, psychological channel of in-group bias and the negative impact of intergroup contact been weaker than expected? We reason that this is because group identification occurs in many different settings, and settings with features that may induce a more negative outcome may have been understudied in the literature. Group identification may occur without the physical presence of non-coethnics, as individuals respond to cues such as photographs, ethnic surnames, or names of ethnic groups, when taking surveys or reading the news.

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[6] The contact hypothesis posits that, where cooperation is supported by custom and authority, and when group members are of equal status, pursue joint goals, and engage non-competitively, contact between the groups reduces intergroup prejudice and increases empathy toward the out-group (Allport 1954).

[7] For example, Shook and Fazio (2008) study how the (randomly assigned) race of their college roommate affects students' interracial attitudes. This type of contact may not be applicable to the much shorter contact we study here; Enos (2014) notes that extended interaction may reduce the novelty of contact, thus reducing the salience of the out-group.

This type of identification is well-represented in the literature. On the other hand, group identification may also arise as people of different ethnicities come together to work or live near each other, as we see in the meta-studies of the contact hypothesis. However, a third type of contact exists in the middle ground, where non-coethnics are physically present in the same space, but are not pursuing a joint goal or even conversing. This type of casual contact occurs regularly in the course of an individual's daily activity (e.g., while waiting for services or riding the bus alongside others), but is difficult to simulate in studies. The few who have studied such interactions suggest that this distinction is analytically fruitful. Enos (2014) randomly exposes white Bostonians to Spanish-speaking Hispanic confederates while waiting for their commuter train and finds a statistically significant increase in whites' support for exclusionary immigration policies toward Mexicans after three consecutive days of brief physical exposure. Similarly, Adida, Laitin, and Valfort (2016) find that increasing the number of Senegalese Muslims that are physically present in a dictator game session decreases native French donors' offers to their Senegalese Muslim partners.

Why would being in physical proximity to a non-coethnic activate a psychological mechanism of in-group bias that otherwise lies dormant? Following others who have noted the neurobiological roots for implicit biases and parochial altruism (Bertrand and Duflo 2017, Whitt 2014), we begin with the link made in neuroscience between sensory stimuli – such as scents (Leukel 1976), sounds (Brück, Kreifelts, and Wildgruber 2011), and expressions (Shah et al. 2001) – and the activation of the limbic system, the part of the brain that has long been connected to unconscious assessment of threat and familiarity. For example, the activation of amygdala, the fear-processing center of the limbic system, is linked to implicit bias about race and ethnicity (Cunningham et al. 2004), while hormones produced in the hypothalamus have been shown to induce self-sacrifice for one's in-group

welfare and defensive aggression toward competing out-groups (De Dreu et al. 2010).[8] This unique function of the limbic system may have emerged from its evolutionary role, where it categorizes environmental stimuli as aversive or attractive to generate survival impulses in animals (see Dalgleish (2004) for a review).

Research has shown that unconscious and conscious processing involves different areas of the brain. When the prefrontal cortex is in control, an individual is in what is labeled the "cold" state, able to engage in instrumental and strategic reasoning (Metcalfe and Mischel 1999, Lieberman 2007, Shafir, Simonson, and Tversky 1993). However, when the more primitive limbic system is in control, such as when visceral cues are present,[9] the individual is in the "hot" state: emotional and reactive in ways that even the individual cannot foresee (and may oppose in his cold state). In a telling study, individuals who could smell chocolate chip cookies wagered for them more recklessly compared to individuals for whom the cookies were merely described (Ditto et al. 2006). While the physical and non-physical cues induce very different behavior, both cues are equally correct in the sense that they examine how the individual behaves in different states. This suggests complementary roles for physical and non-physical cues in eliciting group identification.

These insights from neuroscientific research map well onto prevailing frameworks in comparative politics. An individual's sensitivity to the visceral stimuli present in his immediate social and physical environment would dynamically affect his assessment of his similarities with (and

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[8] Neuroscientists' investigation of oxytocin revealed that giving decisions are associated with both altruism and emotionally identifying with another person (Zak, Stanton, and Ahmadi 2007).

[9] Other examples include visuals that induce sexual arousal (Ariely and Loewenstein 2006). Research on the influence of visual, olfactory, and auditory stimuli on decision-making has been heavily applied to marketing.

differences from) a particular ethnic group (Tajfel and Turner 1979). This may explain why despite the fact that some descent-based attributes are hard to change, there are short-run shifts in the salience of identity (Eifert, Miguel, and Posner 2010). In addition, the neuroscience findings that stimuli are processed differently depending on "the particular history of [one's] interactions with the environment" (Damasio 1994, 133) echoes Sambanis and Shayo's (2013, 295) point that "while patterns of social identification shape conflict risk, conflict also shapes patterns of social identification," suggesting that those who either have a history of conflict or have had less exposure to the stimuli are more likely to react strongly to this sort of in-person contact.

This implies that an investigation of the psychological mechanism in conflict environments needs to involve members of groups with a history of violence. We then need to observe whether group identification changes when the out-group is physically present, since their presence may introduce visceral, multi-sensory cues that trigger the emotional ("hot") state. This theoretical framework is reflected in our charitable giving experiment in Afghanistan that measures ethnic minorities' willingness to give anonymously to a charitable cause benefiting a majority that has historically dominated them. We manipulated the ethnic mix in the waiting area in order to observe giving with and without physical exposure to members of the ethnic (out-group) majority. Out-group giving in both cases is compared to a baseline of in-group giving, which allows us to compare the size of in-group bias under non-physical and physical out-group cues. In order to retain as much resemblance as possible to the type of casual contact discussed earlier, we did not direct or encourage interaction in any way in any of our experimental conditions.

Experimental Setting and Design

While interethnic reconciliation is important for peacebuilding and preventing the recurrence of conflict, it is unclear how undirected between-group interactions affect intergroup relations in post-

war contexts. Afghanistan's social and political history makes it a good case to investigate these dynamics. Pashtuns, which are split into different tribes, are the largest ethnic group, comprising approximately 40% of the population (Barfield 2010). There are a number of non-Pashto-speaking minority groups, including Hazaras and Tajiks, which speak Dari. While these groups are distinct from one another, the country's history is characterized by violent political conflict along Pashtun/non-Pashtun lines. Pashtuns founded the modern Afghan state in the 1880s through the repression and subjugation of non-Pashtun minorities, and controlled the Afghan state and dominated the country's politics until the civil war in 1992 (Barfield 2010). Interethnic violence escalated during the civil war, and almost all ethnic factions engaged in arbitrary killing, torture, and sexual violence against civilian members of other ethnic groups (Oxfam 2009).

Three features of Afghanistan's ethnic groups are relevant for our experimental design: (1) like many countries, it exhibits interethnic subordination between "unranked" groups (see Horowitz 1985, 25 ff.), (2) the Pashtun/non-Pashtun ethnic divide is largely synonymous with language (Pashto vs. Dari), and (3) the groups have settled in distinct regions: Pashtuns historically reside in the south and east. This collinearity of ethnicity with language and region is not unique to Afghanistan, as scholars have observed that ethnic groups congregate in geographic space (Bates 1974, Bates 1983) and that language is often synonymous with ethnic identity (Laitin 2000).

Our experiment takes place in Kabul, which is much more ethnically diverse than rural areas due to increased urban migration. Thus while Kabul's neighborhoods tend to be ethnically segregated, the city's residents are more used to seeing members of other ethnic groups in public places than their rural counterparts, and Kabul's non-Pashtuns are more likely than rural non-Pashtuns to speak Pashto. These features may make interethnic relations more harmonious than elsewhere in the country. Kabul's uniquely multi-ethnic composition should bias against finding

evidence of in-group bias running through a psychological channel, and implies that any in-group bias resulting from physical exposure to the out-group would be amplified in rural Afghanistan.

The city's public markets serve as microcosms of the nature of interethnic interactions that take place throughout Kabul: though the markets themselves are ethnically heterogeneous, individuals tend to congregate in ethnically homogeneous groups within the markets and choose whether (and how) to interact with others. Our subjects are male day laborer recruited from these markets. While our experiment is conducted on a convenience sample, our subjects are drawn from the very population about which we wish to make inferences: typical Afghan men (low income, undereducated, sporadically employed in a low-skill occupation, ethnically diverse).

We recruited day laborers early in the morning as they waited for job opportunities. Our personnel approached potential subjects in the market area and asked if they would participate in a survey about the labor force in Kabul. In exchange, they were paid 500 AFN (about $8.60 at the time, a little over a day's wage). Subjects who provided oral consent were transported to the enumeration location, where they waited in a walled-in courtyard to be paid. Enumeration of the first group of subjects began around 7 AM, and the last group of subjects had finished and exited the location by about noon, a span of approximately 5 hours. To simulate the type of contact we are interested in, we did not force or direct interactions among waiting subjects in any of the treatment conditions. Our goal was to allow participants to interact as they saw fit (Enos 2014) and hence despite the physical proximity, social interaction could be positive, negative, both, or non-existent. We estimate that the walled courtyard where subjects waited is roughly 1000 square meters – small enough to enable subjects to hear the language spoken by others around them, but large enough that they could choose who to sit next to and interact with while they waited.

The core of our lab-in-the-field experiment involves subjects making an anonymous charitable giving decision, which is consistent with other experiments that investigate the role of other-regarding

preferences in in-group bias. While we wanted to exert the experimental control that lab experiments allow, we also wanted to ensure that the giving task was as close as possible to subjects' previous experiences.[10] While our subjects may not have encountered situations where they had to donate to anonymous individuals of varying ethnicity, they are familiar with charitable giving to nonprofits due to the Islamic norms surrounding charity (Lambarraa and Riener 2012). Hence, even though charitable donation allows for the possibility of free-riding,[11] we cooperated with Emergency Hospital, a well-known international nonprofit that provides medical care to Afghans (Mogelson 2012), as the receiving charity. Two of Emergency's main hospitals in Afghanistan are located in different, highly ethnically homogeneous provinces: Anabah, in the Panjshir Valley of the north, and Lashkar-gah, Helmand, in the south. We can confidently assume that our study subjects were aware that these provinces are dominated by a particular ethnic group – non-Pashtuns and Pashtuns, respectively.[12] By alternating the beneficiary of the contribution between these two hospitals that are run by the same nonprofit, we vary the ethnic identity of those who would benefit from the hospital's

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[10] Gneezy and Imas (2017) argue that lab-in-the-field experiments can maximize the benefits of lab and field experiments (control and applicability of results, respectively) while minimizing the costs of each (subjects not drawn from the relevant population and lack of evidence on causal mechanisms, respectively).

[11] In other words, subjects may not give because they think that others are giving. We test for this in the Exploring the Mechanism section below. Concerns about free-riding would not have arisen had we used the dictator game, but given the background of our subjects, we felt that it would not correspond well to their everyday life.

[12] It is well-known among Afghans that these regions are highly ethnically homogeneous, an attribute reflected in systematic settlement data (Wucherpfennig et al. 2011).

services while holding constant the attributes of the public good itself (e.g., type of services, reputation, etc.).

We run three treatments: *In*, *Out*, and *Out-Physical*. The beneficiary hospital in the *In* treatment is in a non-Pashtun, Dari-speaking province (Panjshir), while in both *Out* and *Out-Physical* it is in the Pashto-speaking province (Helmand). In the *In* and *Out* treatments, we recruited only non-Pashtuns, so subjects were waiting only with other non-Pashtuns before making their contribution. In the *Out-Physical* treatment, we recruited Pashtuns and non-Pashtuns at a ratio of 1:2 (this linguistic mix was maintained in each session) and had everyone wait in the same courtyard. Subjects were called in from the courtyard in groups of 5–7 to be enumerated. As illiteracy is high in Afghanistan, we paired each subject with a coethnic enumerator to orally administer the survey and record their answers. As subjects were called, interviewers confirmed their language out loud, so group members were aware of the linguistic mix in their session. To maintain privacy, each subject–enumerator pair sat behind a privacy partition. Once all subjects in the session had finished the survey, each received payment in an envelope. Then, a solicitor told subjects that they had the (unexpected) opportunity to contribute to Emergency, by reading the text below in Dari:

Thank you for completing this survey. To thank you for your participation, we would like to compensate you with 500 AFN for your time. On the table in front of you there is an envelope with 500 AFN inside. Today you also have the opportunity to donate part of your compensation to EMERGENCY in Helmand [Panjshir] Province, in the south [north]. As you know, EMERGENCY is committed to caring for the victims of war. The organization provides treatment to our Pashtun [Tajik] brothers and sisters who are victims of war in the south [north]. We invite you to contribute to the treatment of victims of war in the region. If you would like to donate to EMERGENCY, please leave the money you wish to donate in the envelope. Remove the money you wish to keep for yourself from the envelope. If you decide not to make any donations, you can leave the envelope empty. Before you leave the room, please drop the envelope in the box by the door.

The solicitor and enumerators then left the room to give the subjects privacy. Subjects decided privately how much to contribute and then left with the money they decided to keep.[13]

Due to heightened security concerns in the country at the time, it was imperative that the experiment was completed in as few days as possible. While the ideal would have been to take the day's recruits and place them randomly into one of our three different treatment conditions upon arrival at our enumeration location, this would have required two separate and identical waiting areas, an ethnically mixed one (for non-Pashtuns in *Out-Physical*) and an ethnically homogeneous one (for non-Pashtuns in *In* and *Out*) to retain the integrity of the treatments. Since we could not do this at our location, we alternated between *In* and *Out* sessions on day 1 and ran *Out-Physical* on day 2. This has two potential consequences. First, it may have affected the balance of demographics across treatment conditions (Table 1), which we control for in our regressions. Second, one might worry that the results are an artifact of day-specific shocks. However, the intensity of treatment is randomly assigned: we populated the sessions by selecting the nth person from the day's registration list of recruits, where n differed each day. Thus subjects' wait times randomly varied from minutes to several hours. This provides a way to test that differences across treatment conditions are due to exposure to treatment.

In the Exploring the Mechanism section, we lay out the observable implications of our primary mechanism, as well as alternative mechanisms (such as free-riding and day-specific shocks) and test them against the data. The evidence is not consistent with these alternative mechanisms and instead shows that the behavioral differences observed are indeed treatment effects (physical vs. non-physical exposure to the out-group).

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[13] Envelopes were unobtrusively numbered to match surveys with contributions. The location of the exit allows no opportunity for exiting subjects to communicate with waiting subjects.

Experimental Results

Summary statistics of key variables for our non-Pashtun subjects are presented in Table 1 (Panel A). The average age was 33, and most were married. Only half were educated at all, and those who had received any education had, on average, 6.8 years of schooling. About half speak more than one language (average 1.6), and Pashto is the most common second language. Subjects had spent almost a decade as day laborers, earning about 4,346 AFN ($75) per month, which provides them with $2.50 a day for their family. The education level and earnings are in line with the best available demographic survey evidence across the entire population (Hopkins 2014), suggesting that our subjects are representative of the average Afghan on these observable characteristics.

Table 1 (Panels B, C, and D) shows subject demographics across the *In*, *Out*, and *Out-Physical* sessions, respectively. Statistical tests reveal that subjects' demographics across the treatments are quite similar (SI Table 1), though we find that subjects in *Out-Physical* are younger than those in both other groups. There is a slight difference in language ability and earnings between *Out-Physical* and *Out*, but not between *Out-Physical* and *In*. No differences are observed in education, marital status, or work experience, suggesting that overall, the recruitment process distributed subjects with similar observables across the three treatments. Demographics of the Pashtun subjects in *Out-Physical* (Table 1, Panel E) are also similar in most attributes to the non-Pashtun subjects, with the exception that the Pashtuns are slightly less likely to have had any education.

Non-Pashtun subjects gave an average of 20 AFN in *In*, 21.4 AFN in *Out*, and 16 AFN in *Out-Physical*. Since Pashtun subjects in *Out-Physical* gave less than non-Pashtuns in every treatment condition (10 AFN), the average amount raised across all subjects in *Out-Physical* is much less than the other two. Figure 1 shows the kernel density plots of non-Pashtuns' contributions in the three treatment conditions. A substantial number of subjects gave nothing, especially in *Out-Physical*. The

distribution of small contributions is similar in *In* and *Out* but starkly different in *Out-Physical*. Large

contributions are not present in *In*, but are present and distributed similarly in *Out* and *Out-Physical*.

Shapiro-Wilk tests reject the null hypothesis that the contributions are normally distributed,

suggesting the need for non-parametric tests. Wilcoxon rank-sum tests show that while non-Pashtuns'

giving in *Out* is not statistically different from their giving in *In*, their giving in *Out-Physical* is different

from *In* and *Out* (Table 2). This is true whether we use individuals or sessions as the unit of analysis.

Kolmogorov Smirnov tests return similar results.

As the dependent variable is censored from below at zero, it is recommended that analysis of

charitable giving account for this fact (Hill, Griffiths, and Lim 2011, 615). Table 3 therefore displays

estimates of the main treatment effects from a tobit regression; the results are qualitatively similar

with an OLS regression (SI Table 3). The base model in column 1 regresses an individual's

contributed amount on the treatment dummy variables of interest (*Out* and *Out-Physical*) (SI Table

2). Only two controls are included: enumerator fixed effects and a 'session' variable that indicates

the length of the waiting time. Since the longer subjects wait in the courtyard, the less chance they

have of finding employment opportunities that day, 'session' serves as a rough proxy of the

opportunity cost of participating in the experiment. Consistent with others' findings that

contributions in experiments decrease in later rounds (Alexander and Christia 2011, Chuah et al.

2014, Waring and Bell 2013), we find that the 'session' variable is negative and significant and so we

include it in all models. Heteroskedastic robust standard errors are clustered at the session level to

account for within-session correlation in all regressions.

In Column 2, we include extensive demographic controls, including all the variables discussed

in Table 1. Column 1 shows that there is no statistically significant difference in the amount

contributed between *In* and *Out*, but there is a substantively and statistically significant drop in

contribution size in *Out-Physical* of 12.53 AFN ($p<0.05$). Even after adding extensive demographic

controls to the regression model (Column 2), these results still hold, with an estimated decrease in contribution size of 11.79 AFN for *Out-Physical*.

Result 1: Contribution size in Out *is not statistically different from contributions in* In.
Result 2: Contributions in Out-Physical *are lower than contributions in* In.

Calling in subjects for survey enumeration in random order creates exogenous variation in the duration of physical exposure to a particular ethnic mix (no Pashtuns in *In* and *Out*, or a 1:2 ratio of Pashtuns to non-Pashtuns in *Out-Physical*). If the drop in giving among non-Pashtuns is due to the sensory stimuli brought on by the presence of the Pashtuns, we would expect the negative reaction in *Out-Physical* to increase with prolonged exposure (within limits of being habituated to the stimuli). Figure 2a shows that despite starting at a similar level to the other two treatments in the first half of the day, contributions in *Out-Physical* decreased significantly relative to the other two by the later half of the day, suggesting that the difference between *Out-Physical* and *In* is not due to differences across subject pools, but to the treatment itself. This is confirmed in the regressions in Table 3, where the full model from Column 2 is estimated separately for Early and Late sessions. Giving in *Out* is marginally higher earlier (Column 3, 5.59 AFN, $p<0.10$) but not later, due to a slight drift downwards (Column 4, 1.34, $p>0.10$). Giving in *Out-Physical* starts out statistically similar to *In* (Column 3, -7.15, $p>0.10$), but is significantly lower by the later sessions (Column 4, -16.99 AFN, $p<0.05$).

Result 3: Contributions in Out-Physical *are not statistically different from contributions in Early* In *sessions, but become significantly lower by the Late* In *sessions.*

This is consistent with our hypothesis that physical exposure mimicking everyday interactions (undirected, inadvertent) is more likely to activate the psychological mechanism of in-group bias than non-physical cues of social identity. Next, we test further observable implications of this mechanism and discuss several alternatives to the argument that would challenge our interpretation of the main results.

Exploring the Mechanism

Theoretical Motivation

Pettigrew and Tropp (2006, 767) assert that the effects of "[f]actors that curb contact's ability to reduce prejudice...are likely to be moderated by the degree to which group membership is salient during contact." Evidence from other experiments shows that subjects' reactions to cueing the out-group are moderated by characteristics of both the individual and the setting (Glaeser, Laibson, and Scheinkman 2000, Haile, Sadrieh, and Verbon 2008), which informs our analysis.

Which characteristic should we focus on? If the drop in giving in *Out-Physical* was due to a decrease in altruism toward Pashtuns (e.g., due to negative emotional arousal), it would be tied to out-group stimuli that are present in physical exposure but missing from the textual cues in *Out*: smells, sounds, expressions and movements. While the differences in such stimuli experienced by our non-Pashtun subjects are difficult to define, the strong ethnolinguistic identity of Pashtuns and the political context of Afghanistan ensure that the *Out-Physical* condition will introduce spoken Pashto to what is otherwise a Dari-speaking social environment. According to Damasio (1994) and Sambanis and Shayo (2013), the perception of these stimuli, and the resulting patterns of social identification and behavior, vary depending on an individual's background. In particular, the sound of spoken Pashto is more likely to be perceived as a threat to those who do not understand it. We also expect the negative reaction of a non-Pashto speaker to increase the longer he has to wait in an environment with spoken Pashto, driving down out-group altruism over time. This is our *sensory stimuli mechanism*.

The ability to speak Pashto can also affect a subject's altruism toward the out-group through two other mechanisms, which can interact with the sensory stimuli mechanism. First, non-Pashtun Pashto-speakers can more easily converse with Pashtuns, and the *Out-Physical* treatment might have

20

affected giving by providing an opportunity for non-Pashtuns and Pashtuns to get to know one another. According to the contact hypothesis, this would facilitate more positive attitudes toward the out-group (Allport 1954). We call this the *communication mechanism*. It has two observable implications. First, giving in *Out-Physical* should increase in time among Pashto speakers, but remain unchanged for non-speakers. Second, due to the lack of opportunity to interact, giving in *Out* should not vary according to one's ability to speak Pashto.

Second, non-Pashtun Pashto speakers may be fundamentally different from non-Pashtuns who do not learn Pashto, since the former have been more integrated with Pashtuns in their everyday lives, and hence are likely to exhibit less in-group bias. This dovetails with Alexander and Christia (2011), who show that only Bosnian students who previously had been (randomly) placed in an ethnically segregated school decreased their contributions in a public goods game in response to textual out-group cues; those who attended an ethnically mixed school demonstrated out-group discrimination and even showed out-group favoritism in the presence of the same cues. If the non-Pashtun Pashto speakers feel more altruistic toward Pashtuns, they will give more to the out-group in both *Out* and *Out-Physical* compared to non-Pashtuns who do not speak Pashto. We call this the *previous integration mechanism*.

One might be concerned that the similarities in contribution in *In* and *Out*, and their differences with *Out-Physical*, are not due to the experimental cues but to *day-specific shocks*. This could occur in several ways. First, subjects that are recruited on the first day could be different than subjects that are recruited on the second day (e.g., higher income, more education, etc.). Second, unobserved characteristics that affected subjects' inherent altruism (e.g., neighborhood, or activity in the marketplace) may have differed across days. Third, there could be day-specific shocks in time that affected the time trend of contribution, such as unobserved changes in weather that worsened subjects' mood. Our earlier analysis in the Experimental Results section lessens any worries about

the first two. The demographic breakdown in Table 1 suggests that subjects across all three treatments are similar across a range of observables, and we control for any remaining differences in subsequent regressions. We further find that no in-group bias was observed in the early sessions. Given that wait time was randomly assigned, this suggests that the decrease in giving was not due to the second type of shock. This leaves the third possibility. A shock that affects the time trend of contribution on one of the days (such as rising temperature or changes in the solicitor's energy level) would change the contribution time trend for all subjects on that day; note that demographic features that relate to integration with Pashtuns — such as the ability to speak Pashto — would not matter for giving. We test for this below.

Another potential explanation for the drop in giving in *Out-Physical* is free-riding: pure altruists may have decreased their giving because they believed that others were giving more. According to this explanation, non-Pashtuns give less in *Out-Physical* not because physical cues of ethnic identity affect their altruism, but because they learn that they no longer need to give as much to maintain the same level of charity provision as in the *Out* treatment, since Pashtuns will be giving more to the hospital than non-Pashtuns. The implications of this explanation for the time trend are unclear. Non-Pashtuns could update their beliefs on the need to give after finding out that Pashtuns are also giving, which would imply that giving in *Out-Physical* should be lower from the beginning. But the non-Pashtuns may only learn that the Pashtuns are generous because they have more opportunity to interact with them. This would suggest that the decrease over time is driven by those who can speak Pashto.[14] However, free-riding in any form is unlikely, since it crucially depends on the Pashtuns

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[14] We thank an anonymous referee for pointing out that the decrease in giving in time does not preclude free-riding, since non-Pashtuns may have had to learn that the Pashtuns were giving more.

being more generous to the Pashtun hospital than the non-Pashtuns, which, as we have seen earlier, is not the case.[15]

Empirical Analysis

Figure 2b illustrates non-Pashtun subjects' average contributions split by their ability to speak Pashto. Non-Pashtuns who do not speak Pashto appear to give less as the out-group cues strengthen: giving is highest in *In*, slightly lower in *Out* and much lower in *Out-Physical*. Yet giving from non-Pashtuns who speak Pashto is the same in *In* and *Out-Physical*, and higher in *Out*. To test this more rigorously, and to explore the effect of time, we estimate the full model from Table 3 Columns 2-4 adding interactions of the treatment variables (*Out* and *Out-Physical*) and a dummy variable (*Speaks Pashto*).[16] Table 4 Columns 1-4 summarize the differential effect of the treatments by language ability, using the linear combination of the coefficients (Treatment + Treatment x *Speaks Pashto*).

The results suggest that language ability is indeed a strong predictor of how one responds to out-group cues. Column 1 shows that non-Pashto speakers do not discriminate against the out-group in the presence of non-physical cues, but do so when exposed to physical cues (*Out-Physical*: -18.42 AFN, $p<0.01$). However, Pashto speakers do not discriminate against the out-group even with physical exposure, and even show out-group favoritism in response to non-physical cues (*Out:* 11.31 AFN, $p<0.10$), similar to the behavior of the Bosnian students from the ethnically mixed condition in Alexander and Christia (2011). Comparing the coefficients in Columns 2 and 3 illustrates the trajectory of giving for these two groups of subjects. In the early sessions, non-speakers give similarly

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[15] On p.18, we note that Pashtuns gave on average 10 AFN, which is lower than non-Pashtuns' giving in all treatment conditions (≥16AFN).

[16] SI Table 4 shows the full tobit regression results; SI Table 5 shows an OLS version.

to the in-group and out-group, regardless of whether the out-group cue is non-physical or physical (Column 2). However, by the later sessions, the contributions of non-Pashto speakers become significantly lower when they are physically exposed to Pashtuns (Column 3). This is not true for Pashto speakers, or for non-Pashto speakers who are not physically exposed to Pashtuns (Column 4), suggesting that the mechanism driving the drop in contributions in *Out-Physical* uniquely affects non-Pashto speakers who were exposed to Pashtuns for a relatively longer period of time.

Result 4: The drop in contributions in Out-Physical *is driven by non-Pashtuns who do not speak Pashto. This group contributes equally to in-group and out-group when reacting to non-physical cues (*Out*) or when the exposure to physical cues is short-lived (*Out-Physical, Early*).*

Result 5: The increase in contributions in Out *is driven by non-Pashtuns who speak Pashto. This group does not discriminate when faced with physical cues (*Out-Physical*) regardless of the length of exposure.*

Our findings are consistent with the idea that the *Out-Physical* environment introduces spoken Pashto, a sensory stimulus that may be unconsciously classified as threatening by non-Pashtuns who do not speak Pashto, thus decreasing their altruism toward the Pashtuns (*sensory stimuli mechanism*). Of the other four potential mechanisms – *interaction, day-specific shocks, free-riding and previous integration* – we only find evidence consistent with the last. We now take each in turn.

Neither prediction of the interaction mechanism was borne out: despite the lack of opportunity to interact in *Out*, giving was not equal across speakers and non-speakers, and despite the opportunity to interact in *Out-Physical*, giving did not increase with time for speakers. This suggests that interactions that improve interethnic relationships may not necessarily occur even when people who can communicate with each other occupy the same physical space.

The possibility that our findings in the Experimental Results section are due to day-specific shocks or free-riding also is unsupported by the data. Instead of seeing day-specific time trends across all subjects, as would be predicted by shocks occurring in the course of the day (such as changes in weather or in the administration of the experiment), we find that contribution trends were driven by

demographic features that relate to one's ability to be comfortable around Pashtuns — the ability to speak Pashto. Specifically, we find that the significant drop in contribution in time can be seen only among subjects that are unable to speak Pashto; Pashto-speaking non-Pashtuns exhibit the same time trend in their contribution across both days, suggesting that there were no differences in their experience across days. Concerns for the free-riding mechanism, already low because the Pashtuns were giving less than the non-Pashtuns, decreases further in light of the fact that the drop in giving over time came from non-Pashto speakers. While we cannot completely rule out these three alternate explanations, the evidence we have does not support them.

The previous integration mechanism appears to have more support. It predicts that non-Pashtuns who speak Pashto are more integrated with Pashtuns and hence are more altruistic toward them. Pashto speakers give more than non-speakers in both treatments, though surprisingly, they only show out-group favoritism when presented with the non-physical cue. Overall, our results suggest that the *Out-Physical* treatment effects are driven by the sensory stimuli mechanism that is moderated by previous integration with the out-group.

We caution that our reasoning and analysis of these heterogeneous treatment effects is post hoc and should be considered speculative, but the evidence is consistent with studies of similar behavior in countries with a history of interethnic conflict. For example, Sambanis and Shayo (2013) argue that identification with a higher-status ethnic group is facilitated by attributes in common between the individual and the higher-status group, suggesting that non-Pashtun Pashto-speakers might even exhibit reverse discrimination and identify with Pashtuns in some situations.

Conclusion

We conducted a lab-in-the-field charitable giving experiment in Kabul to investigate the psychological bases of ethnic bias. We investigate if behavior differs in response to non-physical cues

of the out-group compared to physical exposure to the out-group, hypothesizing that stimuli associated with descent-based attributes of social identity are revealed most markedly in casual in-person contact, and that associating these stimuli with a threat (in part based on previous experience with the out-group) results in decreased identification with the out-group. The experimental evidence supports this argument. While subjects were just as willing to contribute to help their own group (*In*) as the out-group Pashtuns in the presence of a non-physical cue (*Out*), contributions decreased markedly in the presence of physical exposure to the out-group (*Out-Physical*). The fact that contributions were decreasing with time of exposure to the out-group, and that a common language with the out-group moderated the negative effect of physical exposure, is consistent with a sensory stimuli mechanism of behavior.

This study provides three main lessons. First, we show that the psychological mechanism plays a significant role in motivating in-group bias (Sambanis and Shayo 2013). We provide a framework for understanding how this psychological mechanism is related to (and activated by) stimuli uniquely present in casual in-person interaction, and report evidence consistent with our argument. Accounting for the psychological bases of group identification may provide new insights for institutional design and efforts to resolve conflict (Sambanis and Shayo 2013).[17] Second, our results suggest that while visceral cues of the dominant out-group are powerful drivers of behavior for ethnic minorities, attributes that enable positive interaction with the out-group – such as a shared language

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[17] As one scholar observes: "Research on the role of the amygdala and related regions in the temporal lobe suggests that dependence on rational incentives is unlikely to resolve fears and hatreds and that leaders of opposing sides are limited in their ability to convince their followers to accept peace without somehow ameliorating emotional biases, which may reside deep within the brain" (Blank 2005, 18).

– can moderate this psychological channel. Third, we show the effects of a relatively understudied type of interethnic interaction – undirected, involuntary, and relatively short in duration. This complements work testing the effects of other types of social identity cues for examining how the individual would behave in different states. This has implications for research in comparative politics and political economy that increasingly employs experimental, non-physical cues or primes of the out-group, such as studies of vote choice (Dunning and Harrison 2010, Adida 2015), politician responsiveness to constituents' needs (McClendon 2016), and citizen policy preferences (McCauley 2014).

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Table 1. Summary Statistics on Demographics for Subjects across All Treatments

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Panel A: All Non-Pashtun Subjects					
Age	213	33	12.13	18	79
Languages Spoken	213	1.62	0.72	1	4
Married	212	0.79	0.41	0	1
No Education	213	0.50	0.50	0	1
Years of Education (if educated)	96	6.83	3.13	2	14
Monthly Income (AFN)	213	4353	2216	88	12000
Time in occupation (years)	212	10.33	8.69	0	50
Panel B: Non-Pashtuns contributing to Non-Pashtuns(In)					
Age	67	36	13.35	18	79
Languages Spoken	67	1.58	0.78	1	4
Married	66	0.788	0.41	0	1
No Education	67	0.478	0.50	0	1
Years of Education (if educated)	31	7.03	3.44	2	14
Monthly Income (AFN)	67	4427	2385	88	10000
Time in occupation (years)	67	9.51	8.81	0	50
Panel C: Non-Pashtuns contributing to Pashtuns (Out)					
Age	73	34	11.54	18	64
Languages Spoken	73	1.52	0.65	1	3
Married	73	0.78	0.42	0	1
No Education	73	0.48	0.50	0	1
Years of Education	33	6.58	3.04	2	13
Monthly Income (AFN)	73	3905	1796	88	10000
Time in occupation (years)	73	11.67	9.81	0	50
Panel D: Non-Pashtuns contributing to Pashtuns (Out-Physical)					
Age	73	29	10.59	18	62
Languages Spoken	73	1.74	0.73	1	4
Married	73	0.81	0.40	0	1
No Education	73	0.53	0.50	0	1
Years of Education (if educated)	32	6.91	2.99	2	12
Monthly Income (AFN)	73	4732	2379	88	12000
Time in occupation (years)	72	9.72	7.19	0	30
Panel E: Pashtuns contributing to Pashtuns (Out-Physical)					
Age	33	30	9.79	18	55
Languages Spoken	33	1.55	0.56	1	3
Married	33	0.91	0.29	0	1
No Education	33	0.73	0.45	0	1
Years of Education (if educated)	9	6.11	2.42	3	11
Monthly Income (AFN)	33	4078	1951	88	9000
Time in occupation (years)	33	10.70	8.00	0	35

Table 2. Average Contributions across Treatment Conditions

	In	Out	OutP	In vs Out	Out vs OutP	In vs Out-P
Individual Level						
N	67	73	73			
Amount (AFN)	20	21.3	16	p=0.98	p=0.04	p=0.05
Session Level						
N	10	11	17			
Amount (AFN)	19.9	21.2	15.9	p=0.65	p=0.05	p=0.08

Notes: p-values correspond to Wilcoxon rank-sum tests

Table 3. Effects of Non-Physical vs. Physical Exposure to Out-group on Contributions (Tobit)

	All	All	Early	Late
	(1)	(2)	(3)	(4)
VARIABLES	Amount	Amount	Amount	Amount
Out	1.33	2.15	5.59*	1.34
	(3.31)	(3.32)	(3.32)	(4.48)
Out-Physical	-12.53**	-11.79**	-7.15	-16.99**
	(5.41)	(5.63)	(7.21)	(7.22)
Session	-0.75***	-0.61**	-1.10	-0.69
	(0.29)	(0.29)	(0.68)	(0.64)
Constant	34.56***	32.51*	54.36**	10.90
	(6.11)	(18.41)	(26.93)	(23.18)
Demographic Controls	No	Yes	Yes	Yes
Log likelihood	-760.04	-754.27	-394.17	-345.53
F-statistic	3.54	4.32	25.52	9.96
Observations	213	212	106	106

Notes: All models control for enumerator fixed effects. Robust standard errors clustered on session. See SI Table 2 for full results. *** p<0.01, ** p<0.05, * p<0.1

Table 4. Treatment Effects by Ability to Speak Pashto (Early vs. Late) (Tobit)

Effect of treatment			
	ALL	EARLY	LATE
	Subject does not speak Pashto		
Out	-2.71	2.24	-3.34
	(3.85)	(3.26)	(6.99)
Out-Physical	-18.42***	-9.18	-26.76***
	(6.75)	(9.68)	(7.01)
	Subject speaks Pashto		
Out + Out * demog. dummy	11.31*	11.74	9.22
	(6.71)	(11.27)	(8.58)
OutP + OutP * demog. dummy	-5.00	-4.11	-5.29
	(7.37)	(10.13)	(11.31)

Notes: Results based on models in Table 3 Columns 2-4.

Figure 1. Kernel Density of Non-Pashtuns' Contributions across Treatment Conditions

Figure 2a. Average Contributions of Non-Pashtuns
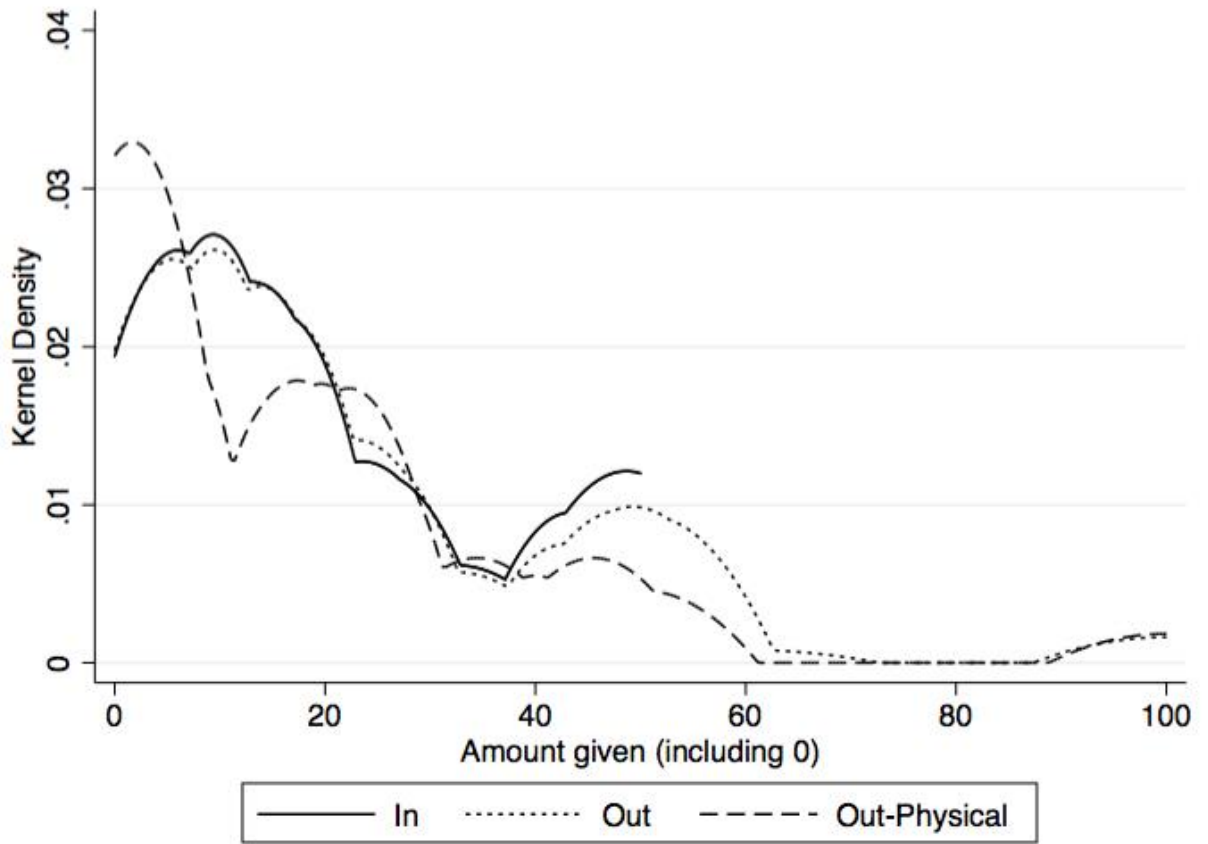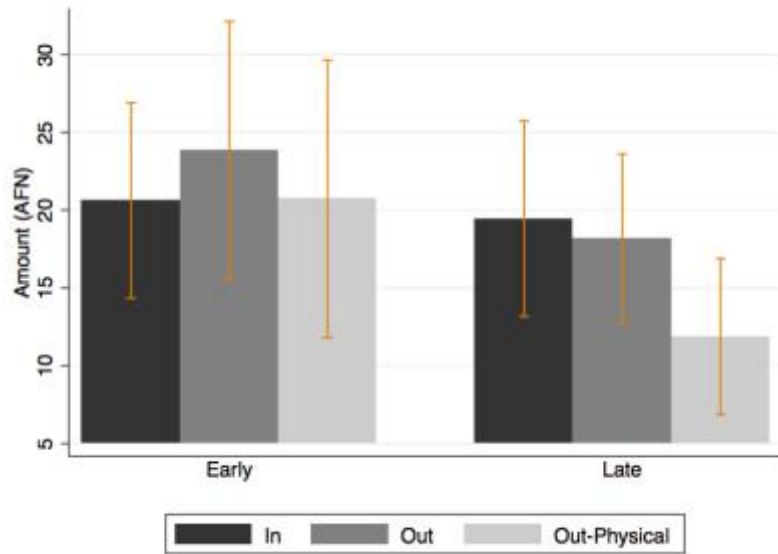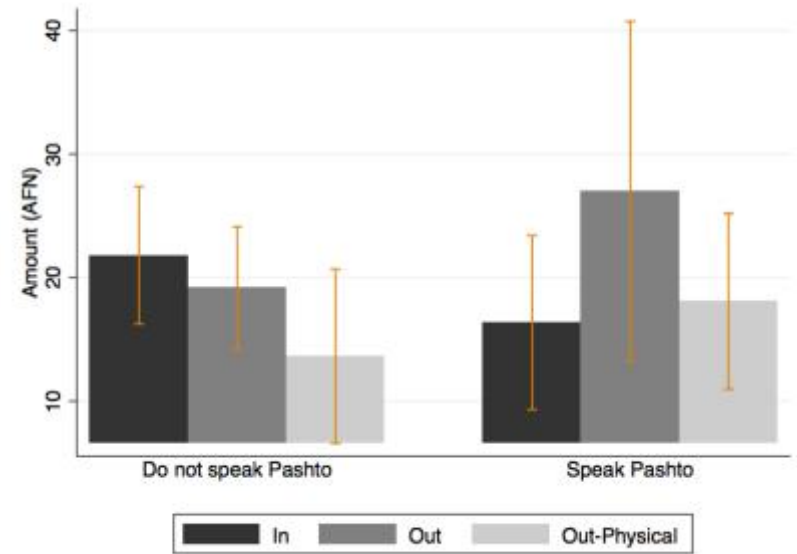   Early vs. Late Sessions

Notes: Bars depict subjects' mean contribution amounts, by treatment condition, with associated 95% confidence intervals.

Figure 2b. Average Contributions of Non-Pashtuns
    Non-Pashto speakers vs. Pashto Speakers

Notes: Bars depict subjects' mean contribution amounts, by treatment condition, with associated 95% confidence intervals.

The Psychology of Ethnic Bias:
Experimental Evidence from Afghanistan

Supporting Information

Institutional Review and Ethics

The experimental protocol was approved by the [author's institution's] IRB (PRO14050489). The protocol also was reviewed by the Asia Foundation's Director of Survey and Research, at the [author's institution's] request, and had "no concern with this study in terms of cultural sensitivities or local norms." The IRB granted approval for researchers to gain oral (instead of written) consent to participate in the experiment, given high rates of illiteracy in Afghanistan. Authors held CITI human subjects training/certification and were present in the field throughout the experiment and participated in and oversaw recruitment and enumeration of subjects.

There was no deception present in the experiment. Authors delivered all funds that subjects donated in the experiment to EMERGENCY's Programme Coordinator in Kabul. (A letter confirming EMERGENCY's receipt of the funds is on file with the author.) We do not think that participation in the experiment constituted economic hardship for the (severely) economically poor subjects. Subjects were paid a little more than a normal day's wage for participation in the experiment (even though subjects gave at most a half day of their time). The choice presented – to contribute to a nonprofit charitable organization – is familiar to subjects in the context of charitable giving in Islam, and since their contribution choice was anonymous, they faced no external pressures to give.

Recruitment and Enumeration

As we note in the main text, our results are based on a convenience sample. While we describe the close similarity of our subjects' demographic characteristics to available national-level population statistics in the main text, since there is no accurate recent census data available, there is no way to know whether our subjects are representative of the broader Kabul (or Afghan) population. We recruited from markets across the city; to avoid duplicate recruitment, we did not revisit any market. Since day-laborers tend to wait for employment opportunities at only one market, and given the short time frame of the experiment, the chance of spillover effects seems small, though we cannot rule this out empirically. Day 1 subjects were recruited from Sar e Shamali, Sar e Kotal, and Pol e Sorkh markets; day 2 subjects were recruited from Karte Naw, Bagrami, and Doghabad. There was no subject attrition.

SI Table 1. Balance of Demographics across Treatment Conditions

	p-values of Differences in Means (two-tailed tests)			
	non-Pashtuns In vs Out	non-Pashtuns Out vs OutP	non-Pashtuns In vs OutP	non-Pashtuns vs Pashtuns OutP
Age	0.39	0.01	0.01	0.57
Languages Spoken	0.61	0.06	0.22	0.18
Marital Status	0.92	0.68	0.77	0.19
No education	0.98	0.51	0.51	0.06
Years of education (if educated)	0.57	0.66	0.88	0.47
Monthly income	0.14	0.02	0.45	0.17
Years in occupation	0.17	0.17	0.87	0.54

SI Table 2. Effects of Non-Physical vs. Physical Exposure to Out-group on Contributions (Tobit)

VARIABLES	All (1) Amount	All (2) Amount	Early (3) Amount	Late (4) Amount
Out	1.33	2.15	5.59*	1.34
	(3.31)	(3.32)	(3.32)	(4.48)
Out-Physical	-12.53**	-11.79**	-7.15	-16.99**
	(5.41)	(5.63)	(7.21)	(7.22)
Session	-0.75***	-0.61**	-1.10	-0.69
	(0.29)	(0.29)	(0.68)	(0.64)
Age		-0.01	-0.24	0.32
		(0.24)	(0.35)	(0.31)
Languages Spoken		0.75	-3.63	2.54
		(4.12)	(6.80)	(4.47)
Not married		-14.12**	-32.69***	1.86
		(6.66)	(11.84)	(7.48)
Years of Education		0.38	0.61	-0.06
		(0.54)	(0.71)	(0.65)
Monthly Income		0.54	0.84	1.75
(thousand AFN)		(0.98)	(1.24)	(1.32)
Time in occupation		-0.16	-0.79*	0.15
(years)		(0.30)	(0.44)	(0.33)
Log likelihood	-760.04	-754.27	-394.17	-345.53
F-statistic	3.54	4.32	25.52	9.96
Constant	34.56***	32.51*	54.36**	10.90
	(6.11)	(18.41)	(26.93)	(23.18)
Observations	213	212	106	106

Notes: Full results from models in Table 3. All models control for enumerator fixed effects. Robust standard errors clustered on session. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

SI Table 3. Effects of Non-Physical vs. Physical Exposure to Out-group on Contributions (OLS)

	All	All	Early	Late
	(1)	(2)	(3)	(4)
VARIABLES	Amount	Amount	Amount	Amount
Out	1.53	2.03	6.30**	0.30
	(2.39)	(2.41)	(2.70)	(3.68)
Out-Physical	-6.80*	-6.27	-2.92	-9.31*
	(3.67)	(3.77)	(5.29)	(5.17)
Session	-0.53**	-0.45**	-0.59	-0.54
	(0.20)	(0.22)	(0.51)	(0.54)
Age		-0.01	-0.21	0.29
		(0.19)	(0.32)	(0.25)
Languages Spoken		0.09	-2.45	1.55
		(2.83)	(5.87)	(2.66)
Not married		-9.21*	-23.59**	2.80
		(4.76)	(8.57)	(5.49)
Years of Education		0.27	0.37	-0.03
		(0.40)	(0.54)	(0.50)
Monthly Income		0.22	0.44	0.91
(thousand AFN)		(0.78)	(0.98)	(1.00)
Time in occupation		-0.11	-0.48	0.05
(years)		(0.21)	(0.33)	(0.27)
Constant	32.86***	32.98**	47.61*	16.49
	(4.96)	(14.65)	(24.26)	(16.38)
Observations	213	212	106	106
R^2	0.08	0.11	0.21	0.18

Notes: OLS versions of models in Table 3. All models control for enumerator fixed effects.
Robust standard errors clustered on session. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

SI Table 4. Treatment Effects by Ability to Speak Pashto (Early vs. Late) (Tobit)

VARIABLES	(1) ALL	(2) EARLY	(3) LATE
Out	-2.71	2.24	-3.34
	(3.85)	(3.26)	(6.99)
Out-Physical	-18.42***	-9.18	-26.76***
	(6.75)	(9.68)	(7.01)
Out x Speaks Pashto	14.02*	9.50	12.56
	(7.96)	(12.88)	(11.59)
Out-Physical x	13.42*	5.07	21.46*
Speaks Pashto	(8.09)	(12.65)	(11.35)
Session	-0.59**	-1.04	-0.41
	(0.30)	(0.64)	(0.79)
Age	5.78	6.92	-4.67
	(5.09)	(6.13)	(6.95)
Speaks Pashto	-10.28	-8.37	-8.37
	(6.31)	(8.87)	(10.51)
Not married	-16.28**	-32.85***	2.97
	(6.84)	(11.57)	(6.29)
Years of education	0.50	0.60	0.08
	(0.51)	(0.70)	(0.65)
Monthly Income	0.00	0.00	0.00
(thousand AFN)	(0.00)	(0.00)	(0.00)
Time in occupation	-0.05	-0.75*	0.35
(years)	(0.28)	(0.44)	(0.27)
Constant	33.03***	39.58***	23.62
	(9.41)	(12.12)	(17.27)
Log likelihood	-751.95	-393.51	-344.27
F-statistic	3.90***	56.42***	24.09***
Observations	212	106	106

Notes: Full results of Table 4 (Tobit). All models control for enumerator fixed effects.
Robust standard errors clustered on session. *** p<0.01, ** p<0.05, * p<0.1

SI Table 5. Treatment Effects by Ability to Speak Pashto (Early vs. Late) (OLS)

VARIABLES	(1) ALL	(2) EARLY	(3) LATE
Out	-2.32	3.16	-4.44
	(3.06)	(2.81)	(5.54)
Out-Physical	-11.76**	-5.56	-16.28***
	(4.43)	(7.67)	(4.66)
Out x Speaks Pashto	12.02*	8.82	11.74
	(6.54)	(11.25)	(8.76)
Out-Physical x	10.23*	5.95	14.76*
Speaks Pashto	(5.57)	(9.57)	(7.55)
Session	-0.43*	-0.56	-0.27
	(0.22)	(0.48)	(0.60)
Age	6.03	6.75	-1.39
	(4.30)	(5.58)	(5.56)
Speaks Pashto	-8.72*	-7.28	-7.56
	(4.40)	(6.88)	(6.93)
Not married	-11.75**	-24.08**	1.59
	(5.00)	(8.44)	(4.72)
Years of education	0.39	0.37	0.17
	(0.37)	(0.56)	(0.52)
Monthly Income	0.00	0.00	0.00
(thousand AFN)	(0.00)	(0.00)	(0.00)
Time in occupation	0.01	-0.45	0.25
(years)	(0.20)	(0.29)	(0.25)
Constant	32.41***	35.33***	26.23*
	(8.15)	(11.04)	(14.20)
Observations	212	106	106
R^2	0.14	0.22	0.19

Notes: OLS version of SI Table 4. All models control for enumerator fixed effects.
Robust standard errors clustered on session. *** p<0.01, ** p<0.05, * p<0.1

SI Table 6. Treatment Effects by Ability to Speak Pashto (Early vs. Late) (OLS)

Effect of treatment	ALL	EARLY	LATE
	Subject does not speak Pashto		
Out	-2.32	3.16	-4.44
	(3.06)	(2.81)	(5.54)
Out-Physical	-11.76**	-5.56	-16.28***
	(4.43)	(7.67)	(4.66)
	Subject speaks Pashto		
Out + Out * demog. dummy	9.70*	11.97	7.30
	(5.35)	(9.94)	(6.37)
OutP + OutP * demog. dummy	-1.52	0.38	-1.51
	(5.03)	(7.05)	(7.85)

Notes: Results based on models in SI Table 5. All models control for enumerator fixed effects.
Robust standard errors clustered on session. *** p<0.01, ** p<0.05, * p<0.1

1	Primary Survey No	|___|___|___|

2	Interviewer Code	|___|___|___|

3	Interview Date	|___|___| |___|___| |___|___|___|___|

4	Interview Start Time	[USE 24 HOUR CLOCK]	|___|___|:|___|___|

5	Interview End Time	[USE 24 HOUR CLOCK]	|___|___|:|___|___|

6	How old are you	|___|___|___|	88 Don't Know / 99 Refuse to Answer

7	What is your native language? [Do NOT prompt.]	1 Pashto	3 Uzbeki	5 Pashayi	7 Turkmani
		2 Dari	4 Balochi	6 Nuristani	8 Other

8	What other languages do you speak?	1 Pashto	3 Uzbeki	5 Pashayi	7 Turkmani
		2 Dari	4 Balochi	6 Nuristani	8 Other

9	What is your Marital Status?	1 Married	3 Widowed
		2 Married	4 Divorced

10	What type of school did you attend?	1 Koranic school	3 Both	88 Don't Know
		2 Western or modern Islamic school	4 Didn't attend school	99 Refuse to Answer

11 [If Western or modern Islamic school:] what is the highest grade-level of education you completed?

1	G1	4	G4	7	G7	10	G10	13	1 year university	16	4 years university	77	NA
2	G2	5	G5	8	G8	11	G11	14	2 years university	88	Don't Know		
3	G3	6	G6	9	G9	12	G12	15	3 years university	99	Refuse to Answer		

What is your current occupation?
[Do NOT prompt]

Self-employed		Private sector		Other	
1	Farmer	5	Professional	8	Civil Servant
2	Trader/hawker	6	Unskilled labor	9	Unemployed
3	Professional			10	Pensioner
				11	Student
4	Other [specify]:	7	Other [specify]:	12	Other [specify]:

13	How long have you been working in your current occupation in Kabul?	|___|___| Months |___|___| Years

14	How many days did you find work last week?	|___|___| Days

15	How many afghanis do you earn in a typical month?	|___|___|___|___|___|___|
		88 Don't Know 99 Refuse to Answer

8

16	**What is the most challenging problem that you face in your work as a construction worker?**		
1	Low wages	5	competition with Pakistani workers
2	Cannot find work every day	6	No support from government
3	Work is too hard	7	working days too long
4	Being away form family		

17	**Which province are you from?**
	Province Name:

18	**Which province are you from?**
	Province Code: |_____|_____|

19	**Which ethnic group do you belong to?**
1	Pushton
2	Tajik
3	Hazara
4	Uzbak
5	Turkmen
6	Aimagh
7	Baluch
8	Other:

20	**How wealthy is your household comparedto other households in your neighborhood?**				
1	Poor	3	Above Average	88	Don't Know
2	Below Average	4	Rich	99	Refuse to Answer

9