Gu, Jun; Mueller, Annika; Nielsen, Ingrid; Shachat, Jason; Smyth, Russell

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Reducing prejudice through actual and imagined contact: A field experiment with Malawian shopkeepers and Chinese immigrants

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Reducing Prejudice through Actual and Imagined Contact: A Field Experiment with Malawian Shopkeepers and Chinese Immigrants
JASON SHACHAT

Corresponding author,
Professor of Experimental Economics, Durham University Business School
Mill Hill Lane, Durham City, DH1 3LB, United Kingdom.

T +44 (0) 191 3345895
W https://www.dur.ac.uk/business/research/economics
    http://www.jasonshachat.net
E jason.shachat@durham.ac.uk

JUN GU

Senior Lecturer, Department of Management, Monash Business School, Monash University, Melbourne
W https://business.monash.edu/management
E J.Gu@monash.edu

ANNIKA MUELLER

Department of Economics, Econometrics & Finance, University of Groningen
W http://www.rug.nl/few/organization/scientific-departments/eef
E a.m.mueller@rug.nl

INGRID NIELSEN

Professor, Department of Management, Deakin Business School, Deakin University, Melbourne
E ingrid.nielsen@deakin.edu.au

RUSSELL SMYTH

Professor, Head of Department of Economics, Monash Business School, Monash University, Melbourne
W https://business.monash.edu/economics
E Russell.Smyth@monash.edu

Institute of East Asian Studies / Institut für Ostasienwissenschaften

University of Duisburg-Essen
Duisburg Campus, Forsthausweg
47057 Duisburg, Germany

T +49(0) 203 379-4191
F +49(0) 203 379-4157
E in-east@uni-due.de

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Download: www.in-east.de

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Abstract
We examine the ability of intergroup contact to ameliorate the effect of in-group bias on economic outcomes. Specifically, we employ randomized experiments to test whether actual and imagined contact is effective in reducing prejudice between indigenous Malawian shopkeepers (in-group), and their Chinese immigrant counterparts (out-group), and test the stability of these changes over time. We find differing results with actual contact. Local Malawians’ attitude towards Chinese migrants did not improve, but their willingness to spend time did. In contrast, actual contact spurred improvement in the Chinese migrants’ attitude toward local Malawians, but did not increase their willingness to spend time with them. These effects persisted over a time period of at least ten days. Imagined contact had no impact on Malawians’ attitude or behavioral intention with respect to Chinese migrants.

Keywords
Chinese migrants in Africa, actual contact, imagined contact, prejudice, field experiment

JEL Codes
C93, J15, 019
1 INTRODUCTION

The last decade has seen a massive influx of Chinese migrants, among them many traders and shopkeepers, into sub-Saharan Africa. Chinese immigrant shopkeepers and their local counterparts are shaped by fundamentally different cultures whose norms and strategies translate into diverse sets of business practices. Potential frictions stemming from these differences, and the consequent loss in economic efficiency, make the study of social identity especially critical in this context.

Social identity is a person’s sense of self, derived from group membership, where the group can be defined in various ways (e.g. ethnicity, gender, occupation or religious affiliation) (Chen & Li 2009). Social identity has been shown to generate many positive economic outcomes within groups. Common group identity has been shown to increase cooperation (Eckel & Grossman 2005; Goette, Huffman & Meier 2006), and improve coordination (Charness, Rigotti & Rustichini 2007; Chen & Chen 2011) among group members. Building a strong group identity can be used to solve or mitigate hold-up problems (Morita & Servatka 2013). Group identity also increases the degree of altruism (Chen & Li 2009) and charitable giving (Eckel & Grossman 2005) toward in-group members.

At the same time, social identity has been shown to lead to negative economic outcomes. Where there is an in-group and out-group, low levels of trust often exist between the groups and the out-group has been shown to have low levels of morale (Tsutsui & Zizzo 2014). When groups are formed, the concepts of “them” and “us” trigger emotional responses, which can lead to discrimination against members of the other group (Ahmed 2007). In particular, there is much evidence from experimental economics showing that participants exhibit in-group bias, meaning that they favor those from their own social group over those from another social group (see e.g. Chen & Li 2009; Goette et al. 2006).

Identity-based favoritism results in discrimination against, and stereotyping of, members of the other group on the basis of their social identity. This produces myriad problems that impede economic progress. For members of an out-group, it can hinder the prospects of finding employment (Booth, Leigh & Varganova 2012) as well as career advancement within an organization (Pittinsky, Shih & Trahan 2005). In addition, the progression of children from an out-group at school can be adversely affected if teachers form expectations of their academic abilities based on stereotypes (Lakhani, Sacks & Heltberg 2014).

In addition, identity-based favoritism can result in economic problems that impede economic development. It impedes, for example, attempts to assist with social integration of migrant communities from ethnic out-groups (Casey & Dustmann 2010). Identity-based favoritism is also the basis of much ethnic-religious intolerance and conflict (Alesina, Baqir & Easterly 1999). In-group bias, coupled with a strong sense of social identity, also underpins elements of ideological/religious extremism, which has been shown to contribute to social violence in many parts of the world (Chen 2010).

Economists have recognized that it is important to implement strategies to address prejudices grounded in social identity (Ben-Ner, McCall, Stephane & Wang 2009; Fryer & Loury 2013). In this paper, we report the results of a framed field experiment that tests one such strategy; namely, promoting contact between an in-group and an out-group. The contact hypothesis, which was first formulated by the psychologist Gordon Allport (1954), states that intergroup contact can reduce prejudice towards the other group. The contact hypothesis has far reaching implications because it suggests that positive intergroup contact between individual group members can generalize to affect positive attitude change about,
and behavioral change toward, the whole other group. Carrell, Hoekstra and West (2015) recently introduced the contact hypothesis into the economics literature. Based on an experiment with random room assignment at the U.S. Air Force Academy, and consistent with the contact hypothesis, they find the attitudes and behaviors of white males towards African Americans are positively influenced by the number and aptitude of black peers with whom they have had contact.

Our study has several features that extend and fill gaps in the existing literature. One such feature is that we examine both the effects of actual and imagined contact on overcoming in-group bias. Hewstone & Brown (1986) refined Allport’s (1954) original hypothesis to require actual contact that is pleasant in nature and involving an element of cooperation towards a common shared goal. Existing research demonstrates that such contact acts to reduce prejudice via a range of emotion-based mediating processes, including reduced intergroup anxiety and increased self-disclosure and trust (Crisp & Turner 2012; Pettigrew 1998). Imagined contact is a more recent variation of Allport’s (1954) original contact hypothesis, proposed by Crisp and Turner (2009). The imagined contact hypothesis states contact in the form of an imagined interaction with an out-group can produce more positive perceptions of that group. The logic is that when individuals imagine intergroup contact, they engage in conscious processes that parallel those involved in actual contact, generating positive evaluations of the out-group, similar to the effects of actual intergroup contact (Crisp & Turner 2012; 2013). The efficacy of imagined contact would be a powerful tool for economic and social change. An obvious usage would be low cost, highly scalable interventions through channels such as public service announcements.

A second feature of our study is that we test the effect of actual contact from the perspective of both the in-group and out-group. Most studies assume that in-group prejudice toward an out-group will be reciprocated (Chen & Li 2009). Yet few studies, even in social psychology, test the contact hypothesis from the perspective of reducing out-group prejudice toward the in-group. The reason may be that in terms of promoting social inclusion, the onus generally has to be on the in-group to change its behavior and attitude toward the out-group. However, it is not difficult to think of instances in which breaking down strongly-held stereotypes about members of an in-group among members of an out-group may be important in reducing negative economic outcomes. One such example would be reducing the potential for religious or ideological extremism (Chen 2010).

A third feature of our study is that we use outcome measures that tap both cognitive and behavioral responses to contact. The cognitive measure asks participants about their general attitude toward members of the other group. The behavioral measure asks participants about their willingness to spend time with members of the other group. By including these two measures, we are able to differentiate whether contact produces differences in the way that the groups think about, and plan to act toward, the other group. This distinction is important given that people’s behavioral responses are not always in accordance with their thoughts (Wicker 1969).

A fourth feature of our study is that we examine if any observed change in attitude or intended behavior in response to actual or imagined contact persists over time. If actual or imagined contact is to have a lasting effect on reducing prejudice, it is important that changes in attitude and behavioral intentions persist. This issue has been rarely addressed in the contact hypothesis literature. One exception is Enos (2014), who

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1 Our use of the term actual contact is commonly called direct contact in the social psychology literature. We use ‘actual’ because of its natural juxtaposition to ‘imagined.’

2 Mere incidental contact, such as passing in the street, is not regarded as being sufficient to reduce prejudice (Hewstone & Browne 1986).
performed a randomized controlled experiment in which Spanish-speaking confederates were randomly assigned to be inserted, for a period of days, into the daily lives of Anglo-whites living in homogenous communities in the United States, thus simulating demographic change. The result was a significant increase in exclusionary attitudes among treated subjects. Enos (2014) randomly surveyed community members at T + 3 days and then again at T + 10 days following the introduction of confederates. He found that shifts towards exclusionary attitudes were stronger for those surveyed three days after the treatment than those surveyed ten days afterwards. We differ from Enos (2014) in seeking to establish if inclusionary, as opposed to exclusionary, attitudinal and behavioral change persists over time.

We test whether actual and imagined contact reduces prejudice in the context of Chinese business immigrants in the African nation of Malawi. Chinese outward migration and proliferation of small-scale Chinese enterprises has been increasing since the introduction of more liberalized emigration policies in China in the 1980s. The last decade, in particular, has seen a massive influx of Chinese migrants to sub-Saharan Africa, where many have opened small businesses to compete amongst local merchants. These Chinese have often met resistance from the local competition, resulting in a sharp social divide. Chinese presence in Malawi is similar to that in several other host countries, in generating social frictions with the indigenous populations, yet academic research into the dynamics of these frictions remains scant.

The current research fills this gap by employing two randomized experimental studies to test the effect of actual intergroup contact and imagined intergroup contact between Chinese migrant and Malawian shopkeepers. In the first experiment, we test the effect of actual contact on the attitude of Malawians towards the Chinese, and the willingness of Malawians to spend time with the Chinese and vice-versa. In the second experiment, we employ the notion of imagined contact to test whether Malawian shopkeepers, who imagined contact with their Chinese counterparts, would report a more positive attitude toward, and be more willing to spend time with them. To test the persistence of the contact effects over time, exactly ten days after each session we conducted telephone follow-ups resurveyed participants’ attitudes towards and willingness to spend time with the other group.

We find that actual contact facilitates a behavioral response in Malawian shopkeepers toward their Chinese counterparts, but no attitudinal change. At the same time, we find that actual contact facilitates an attitudinal change in Chinese shopkeepers toward their Malawian counterparts, but no behavioral response. We find that the positive effects due to the actual contact interventions are persistent for at least 10 days. We find that imagined contact has no effect on either cognitive or behavioral responses among Malawian participants towards the Chinese out-group.

The results are important because they shed light on how to design strategies to ameliorate the role of in-group bias in fuelling discrimination and stereotyping about members of other groups on the basis of their social identity. Our results suggest that actual contact is likely to be more effective than imagined contact in reducing the effect of identity-based favoritism, particularly where there is deeply held prejudice and widespread socio-economic disparities between groups.

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3 The contact in this instance was not cooperative and pleasant. Pairs of Spanish speaking confederates joined a daily train commute from predominantly Anglo-Saxon American suburbs, and consistently conversed between themselves in Spanish.

4 We did not include Chinese migrants in the imagined contact study because of the particularly small pool of potential subjects and the greater ex ante emphasis on the ability of intergroup contact to influence the in-group rather than the out-group.
2 CHINESE MIGRATION TO AND DEVELOPMENT OF COMMERCIAL INTERESTS IN AFRICA

A large inflow of Chinese migrants has reshaped the economic landscape of sub-Saharan Africa. Though reliable figures are hard to come by, Sautman (2006) estimates that the number of Chinese migrants in South Africa alone grew from about 30,000 in 2001 to between 100,000 and 300,000 in 2006. This scale of foreign migration of a group with no traditional or colonial ties to Africa is unique. Apart from its scale, the Chinese diaspora in Africa is also qualitatively unique in that the Chinese, unlike other migrant populations with commercial interests, lack cultural or linguistic ties to Africa (for example, Indian migrants in former British colonies in Africa share a common language and certain institutions with the local populace). The influx of Chinese products and the proliferation of small Chinese enterprises have led to lower prices for a range of products and increased competition for local businesses. Further, the presence of Chinese traders has also greatly expanded the choice set of African consumers (McNamee, Mills, Manoeli, Mulaudzi, Doran & Chen 2012).

Political reactions to the Chinese presence have been mixed. While Malawian leaders such as the late president Dr. Bingu wa Mutharika and the former president Joyce Banda have largely welcomed Chinese investment, there have also been recent laws condemned by civil rights groups as xenophobic. In a survey-based study of Chinese private traders in South Africa, Lesotho, Botswana, Zambia and Angola, McNamee et al. (2012) found that Chinese traders pride themselves on their work ethics, and believe that their mind-set is neither comprehended nor shared by their African customers or employees.

A backdrop to Chinese migration to Africa is China’s own political ambition on that continent. China has poured large amounts of foreign aid into Africa, which is tied to expanding its strategic interests there. In 2013 China’s foreign aid budget was US$ 6.4 billion, equivalent to 0.07 percent of the country’s GDP (Brant 2014). Between 2010 and 2012, China provided US$ 14.4 billion of aid to 121 countries; of which 51 were in Africa (Brant 2014). China wants to work with African nations to promote the notion of a Chinese development model in Africa, as an alternative to the Washington Consensus United States-inspired pro-market approach to development in Africa (Davies 2008; Friedman 2009). One has to wonder how much these Chinese development efforts are at risk because of the accompanying social frictions? Further, can the utilization of positive and cooperative social contact provide a grass-roots driven dissipation of the frictions?

We conduct our studies in Lilongwe, which is the capital of Malawi. Malawi is a small land locked country in South East Africa with an approximate population of 16.36 million people. The Malawian economy is largely agrarian and under-diversified; tobacco accounts for the majority of its export earnings (World Trade Organization 2002). Thus foreign investment and access to the Chinese export market have been welcome. Formal diplomatic relationships were established amongst African customers over the perceived poor quality of some Chinese goods (McNamee et al. 2012). For their part, Chinese traders feel misunderstood. In a survey-based study of Chinese private traders in South Africa, Lesotho, Botswana, Zambia and Angola, McNamee et al. (2012) found that Chinese traders pride themselves on their work ethics, and believe that their mind-set is neither comprehended nor shared by their African customers or employees.
between China and Malawi in 2008 after Malawi severed its 41-year old ties with Taiwan. This led to a surge in migration from China in the form of construction workers and private traders. The current size of the Chinese business community in Lilongwe, not including construction workers, is approximately 2000.

Few studies have examined the contact hypothesis considering Chinese migrant groups. There are studies that have found that intergroup contact between adult rural-urban migrants and those with an urban hukou (household registration) in China, is correlated with more positive attitudes towards the other group (Nielsen, Nyland, Smyth, Zhang & Zhu 2006; Nielsen & Smyth 2011). Similarly, research suggests that intergroup contact between Chinese migrants in the Italian town of Prato is positively correlated with more favorable attitudes among the Chinese migrants towards local Italian residents (Nielsen, Paritski & Smyth 2012). A limitation of each of these studies is that because they use cross-sectional self-reported data, they are only able to establish correlation, and not causation, between contact and attitude change. Gu et al. (2014) used an experimental design with random treatment assignment to test the effect of intergroup contact on attitudes between a group of urban adolescents and a group of rural-urban migrant adolescents in China. Their results showed that intergroup contact in the form of completing a pleasant and cooperative task (jointly completing a fun puzzle) was effective in reducing negative attitudes towards the other group.

Studies testing the contact hypothesis in the context of African immigrants are also limited. Escandell and Ceobabu (2009) test the contact hypothesis for African immigrants in Spain and Voci and Hewstone (2003) test the contact hypothesis among African immigrants in Italy. There are similarly few studies situated in Africa and those that exist focus on apartheid in South Africa and do not involve immigrant groups (see e.g. Dixon & Reicher 1997; Swart, Hewstone, Christ & Voci 2011; Wright, Boyd & Tredoux 2003). A limitation of most of these studies, as with most of the social psychology literature, is that they are not able to establish causality.

### 3 Hypotheses and Experimental Designs

In alternative experiments, we examine whether actual contact and imagined contact changes local Malawian shopkeepers’ attitudes and behavioral intentions toward Chinese migrants (a significant majority of whom are also shopkeepers) and vice versa. In so doing, we address the issue of Chinese migration to Africa and the development of Chinese commercial interests in Africa. The latter has largely occurred over the last decade and has resulted in the need to promote cooperation between the Chinese migrant populations and their local hosts.

We focus on the capacity of contact to effect changes in attitude and behavioral intention because our emphasis is on ways to improve cooperation between the migrant Chinese population and domestic commercial groups. Though large-scale Chinese firms operate in key resource-based industries, for most Africans the most visible sign of Chinese presence is that of private traders in goods markets (Broadman 2007; Mohan & Tan-Mullins 2009). If attitudes and behavioral intentions of local Malawians and Chinese migrants – the front line of China’s expansion objectives – are improved, this potentially has implications for grass-roots political acceptance of China’s broader ambitions in Africa.

Specifically, we test the following hypotheses regarding the impact of contact on in-group and out-group attitude:
(H1) Malawians’ attitude towards out-group under actual contact: Actual contact of a pleasant and cooperative nature between Malawian shopkeepers and their Chinese counterparts will improve local Malawian shopkeepers’ attitude towards Chinese migrants;

(H2) Malawians’ attitude towards out-group under imagined contact: Imagined contact of a pleasant and cooperative nature between Malawian shopkeepers and their Chinese counterparts will improve local Malawian shopkeepers’ attitude towards Chinese migrants; and,

(H3) Chinese migrants’ attitude towards out-group under actual contact: Actual contact of a pleasant and cooperative nature between Malawian shopkeepers and their Chinese counterparts will improve Chinese migrants’ attitude towards local Malawians.

We further test the following hypotheses about the impact of willingness to spend time with members of the other group:

(H4) Malawians’ willingness to spend time with out-group members under actual contact: Actual contact of a pleasant and cooperative nature between Malawian shopkeepers and their Chinese counterparts will increase local Malawian shopkeepers’ willingness to spend time with Chinese migrants;

(H5) Malawians’ willingness to spend time with out-group members under imagined contact: Imagined contact of a pleasant and cooperative nature between Malawian shopkeepers and their Chinese counterparts will increase local Malawian shopkeepers’ willingness to spend time with Chinese migrants; and,

(H6) Chinese migrants’ willingness to spend time with out-group members under actual contact: Actual contact of a pleasant and cooperative nature between Malawian shopkeepers and their Chinese counterparts will increase Chinese migrants’ shopkeepers’ willingness to spend time with local Malawians.

We test the following hypothesis on persistence for each treatment:

(H7) Persistence of contact effects: Any improvement in attitude or increase in willingness to spend time resulting from actual or imagined contact will be stable over time.

EXPERIMENTAL DESIGNS

Experiment 1: Actual Contact

A total of 60 indigenous (local) Malawian, and 60 Chinese migrants (most of whom are also shopkeepers), participated in the experiments for monetary compensation. Table 1 provides summary statistics for all participants. To recruit the Malawian subjects, recruiters identified markets and other areas with a large number of shops. Within each such area, the recruiters selected shops based on location with the goal of recruiting Malawian participants from shops as distant as possible from each other. Participants were told that they would be participating in an experiment for up to one and a half hours duration which would involve a survey and a simple, pleasant task. To gain access to the Chinese migrant population, we worked closely with the Community of Chinese Businessmen, Malawi. We identified six community leaders who assisted our recruiting efforts by disseminating basic information about Experiment 2 to the community. Participants were told that they would be participating in an experiment for up to one and a half hours in duration which would involve a survey and a simple, pleasant task.

We employed a randomized experimental design with a treatment to induce actual pleasant and cooperative contact. Participants received 5000 Malawian Kwacha (MWK) as a show-up fee and another 2000 MWK as a transportation fee at the end of their session (US$ 1 ≈ 390 MWK at the time of the study).

The joint experiment consisted of six sessions, two per day, conducted over the 5th, 6th, and 7th of July, 2014. The first three sessions constituted
the control group, the latter three the treatment group. In each session the Malawian and Chinese participants were randomly paired to form dyads. As a result, half of the dyads were randomly selected into a treatment group where they engaged in an actual contact event with their dyad partner, while half were randomly selected into a control group where they did not engage in actual contact with their dyad partner.

A session proceeded as follows: each dyad was seated side by side at a desk. Each participant was given a name card, with his or her last name (e.g., “Banda” and “Ming”, respectively). Once seated, participants in each dyad were instructed to exchange name cards and pronounce their own last name clearly so that each participant could learn the name of their counterpart. Each dyad was then asked to complete two jigsaw puzzles, a task that the participants perceived as enjoyable yet requiring cognitive ability and cooperation on their part to achieve the common goal.

We used the following procedure to manipulate the amount of contact between the treatment and control groups. We gave two comparable jigsaw puzzles per dyad. In the treatment group, each dyad was asked to jointly solve the puzzles one after the other, with the order randomly assigned. In the control group, each dyad was asked to solve both puzzles as well; however, in this case each of the members were randomly assigned one of the puzzles to solve individually. All the participants were given a maximum of one hour to complete the jigsaw puzzle task. After the jigsaw puzzle task, the participants completed a short survey that included demographic and socio-economic questions and our key question to assess a participant’s attitude and willingness to spend time with the members of the other group. We provide the complete questionnaire in the Appendix. But here we provide excerpts of our two key questions for the local Malawians.

Circle the word that best sums up your thoughts about Chinese migrants in Malawi:

1. My general attitude toward Chinese migrants in Malawi is ...
   
   very positive positive neutral negative very negative

2. If I could, I would enjoy spending my spare time with Chinese migrants.
   
   very true true neutral untrue very untrue

We coded responses using a five-point Likert scale (1 = very positive/true, 3 = neutral, 5 = very negative/untrue.)

**Experiment 2: Imagined Contact**

A total of 60 Malawian shopkeepers participated in the experiment for cash compensation. While these participants were different individuals from those who participated in Experiment 1, they were recruited using the same strategy as per the Malawian participants in Experiment 1.

The experiment employed a randomized design with a treatment to simulate imagined pleasant and cooperative contact. Participants re-

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**Table 1: Summary Statistics For Study Participants**

<table>
<thead>
<tr>
<th>Group</th>
<th>Experiment</th>
<th>Treatment or Control</th>
<th>Subjects</th>
<th>Females</th>
<th>Secondary School Graduates</th>
<th>Average Age</th>
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<tr>
<td>Malawian</td>
<td>Direct</td>
<td>Treatment</td>
<td>30</td>
<td>19</td>
<td>27</td>
<td>30.6</td>
</tr>
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<td>Treatment</td>
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<tr>
<td></td>
<td></td>
<td>Control</td>
<td>30</td>
<td>17</td>
<td>24</td>
<td>28.4</td>
</tr>
<tr>
<td>Chinese</td>
<td>Direct</td>
<td>Treatment</td>
<td>30</td>
<td>9</td>
<td>24</td>
<td>34.6</td>
</tr>
<tr>
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<td></td>
<td>Control</td>
<td>30</td>
<td>8</td>
<td>27</td>
<td>36.7</td>
</tr>
</tbody>
</table>
received 5000 MWK as a show-up fee and another 2000 MWK as a transportation fee at the end of their session (US$ 1 ≈ 460 MWK at the time of the study). The experiment consisted of six sessions, two per day, conducted over the 2nd, 3rd and 4th of November, 2014. Again, the first three sessions were used to create a control group and the latter three to create a treatment group (30 participants per group).

A session proceeded as follows. Participants were read a story about climbing Mount Mulanje (one of the two most famous natural sights in Malawi and a popular destination for hiking/climbing among Malawians and Chinese alike), with a shopkeeper they meet for the first time at the foot of the mountain. Our script described the interaction with the shopkeeper as enjoyable and emphasized the cooperative nature of the interaction required to reach the common goal. We used the following procedure to manipulate imagined contact: the participants were asked to either envision a Malawian (control group) or Chinese (treatment group) shopkeeper as their travel companion. During the reading of the script several breaks were provided for visualization. The Appendix contains the full instructions used to manipulate imagined contact. Afterwards, a survey asked participants details about the script that was read out to them, as well as about what they had visualized. Subsequently, the same survey tool as for the actual contact experiment was administered.

We conducted follow-up surveys for both experiments via phone. In all cases, the project associates called participants exactly ten days after the date of their initial participation. The follow-ups comprised of a survey in which a subset of the questions from the initial participation were asked again, including our key questions of interest regarding attitude toward the other group and willingness to spend time with a member of the other group. We obtained follow-up responses for all 120 Malawian participants and 57 out of the 60 Chinese participants.

4 Results

Direct contact has different effects for the in-group (local Malawians) and the out-group (Chinese migrants). Actual contact provides a significant increase in Malawians’ willingness to spend time with a Chinese migrant, but does not improve their attitude towards Chinese migrants. These results are inverted for the out-group. Actual contact does not increase Chinese migrants’ willingness to spend time with local Malawians. However, their attitude towards local Malawians does improve. Both observed initial impacts, local Malawians increased willingness to spend time with Chinese migrants and Chinese migrants’ more positive attitude toward local Malawians, persisted for at least ten days. Imagined contact was not successful. There was no difference between control and treatment responses by local Malawians to either the attitude or willingness to spend time question.

We start by presenting histograms for the responses to the attitude and behavior measures. Figure 1 is a 2 × 2 array of histograms of the local Malawian responses to the attitude question. The rows of the array correspond to the two experiments: the top row for the actual contact experiment and the bottom row for the imagined contact experiment. The left column corresponds to the treatment group and the right column corresponds to the control group. Each histogram reports the response counts for the initial responses, black bars and the follow-up responses, light grey bars, collected ten days later.

Malawians in the actual contact experiment tend to provide low responses, indicating a positive attitude, but there is no apparent difference between the distributions of those in the treatment group and those in the control group. The distri-
Figure 1: (Malawians) Histograms of the initial and follow-up responses to “My general attitude toward Chinese migrants in Malawi”

Figure 2: (Malawians) Histograms of the initial and follow-up responses to “If I could, I would enjoy spending my spare time with Chinese migrants”
bution of the follow-up responses is identical to the initial responses, but this is a mere coincidence as there are subjects who change their response. In the imagined contact experiment, the distribution of the responses of those in the treatment group appears to be more concentrated on lower responses than in the control group. Shortly we will see this treatment effect is only marginally significant. Further this treatment effect erodes in the follow-up ten days later.

Figure 2 presents the $2 \times 2$ array of histograms for the Malawians’ responses to the willingness to spend time question. In the actual contact experiment the distribution of the initial treatment groups’ responses is more concentrated on the lower responses. On the other hand, there is no apparent difference between the initial responses of the treatment and control groups in the imagined contact experiment. Further, in all four cases, the distribution of follow-up responses closely matches that of the corresponding initial responses. Thus, in the case of the actual contact, this is evidence that the contact effect sustains for at least ten days.

Figure 3 presents the $2 \times 2$ array of histograms for the Chinese migrants’ responses to both questions in the actual contact experiment. For the attitude question the responses in the treatment are concentrated on lower, more positive levels. This more positive attitude appears to mute in the follow-up. For the willingness to spend time question, the treatment and control distributions are quite similar.

Next, we formally test our hypotheses. We first examine treatment effects in the initial experiments. In Table 2 we compare the treatment and control responses within each experiment and group by comparing their means with a one-side t-test for which the alternative hypothesis is the mean treatment response is lower than the mean control response. A rejection is consistent with a positive effect of contact. We also conduct a one-sided Wilcoxon rank-sum test that the dis-

---

**Figure 3: (Chinese) Histograms of the initial and follow-up responses to “My general attitude toward the local Malawian people” and “If I could, I would enjoy spending my spare time with the local Malawians”**

![Histograms](image)

- **Treatment Group**
  - Initial: 6, 1, 11, 9, 4, 4, 0, 0
  - Follow-up: 1, 0, 8, 14, 10, 5, 3, 2

- **Control Group**
  - Initial: 1, 0, 14, 14, 0, 0
  - Follow-up: 1, 0, 8, 14, 10, 5, 3, 2
Results

15

The distribution of responses is the same for the treatment and control groups versus the alternative that the response distribution for the control group weakly first order stochastically dominates that of the treatment group. We use this test because the number of observations for each group is just 30 and the histograms do not suggest a normal distribution for responses.

We first consider whether contact positively affects attitude in the top part of the table. For local Malawians, we find no effect on attitude from actual contact. In fact, the treatment mean is slightly larger. We do find marginal support for improved attitude when there is exposure to imagined contact, the treatment mean response is 0.33 lower in this case. This difference is marginally significant, the p-value is approximately 10% for both tests. We find the strongest evidence of positive attitude change for Chinese migrants exposed to actual contact. The mean treatment response is 0.77 lower than the mean control response. In this case we reject both equal means of response and equal distribution of responses at the 1% level of significance. We summarize our first two results.

Result I: Local Malawians’ attitude towards Chinese migrants is not impacted by actual or imagined contact. We reject hypotheses H1 and H2.

Result II: Chinese migrants’ attitude towards local Malawians is positively affected by actual contact. We confirm hypothesis H3.

Now we turn our attention to test the treatment effects of actual and imagined contact on the willingness to spend time with members of the other group. We report the relevant means and hypothesis tests in the lower half of Table 2. First consider the effects for local Malawians. In the actual contact experiment, the mean response is 1.63 for the treatment group, and 2.17 for the control group. We reject the null in favor of the alternative with a p-value slightly larger than 1%. We reach a similar conclusion with the Wilcoxon rank-sum test. In the imagined contact experiment there is little difference in mean response levels of the control and treatment group. The treatment group mean is 2.93, and the control group mean is 2.83. Correspondingly, we fail to reject the null for either the t-test or Wilcoxon rank-sum test. For the migrant Chinese in the contact experiment, the treatment

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Malawian</th>
<th>Malawian</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct</td>
<td>Imaginary</td>
<td>Direct</td>
</tr>
<tr>
<td>General attitude</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td>Control</td>
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<td>3.10</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>(0.81)</td>
<td>(1.03)</td>
<td>(1.30)</td>
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<td>Treatment</td>
<td>1.90</td>
<td>2.70</td>
<td>2.37</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>(0.96)</td>
<td>(1.09)</td>
<td>(0.96)</td>
</tr>
<tr>
<td>t-statistic</td>
<td>-1.16</td>
<td>1.22</td>
<td>2.49***</td>
</tr>
<tr>
<td>p-value</td>
<td>0.89</td>
<td>0.11</td>
<td>0.01</td>
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<tr>
<td>Wilcoxon rank-sum statistic</td>
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<td>1.32*</td>
<td>2.27***</td>
</tr>
<tr>
<td>p-value</td>
<td>0.88</td>
<td>0.09</td>
<td>0.01</td>
</tr>
<tr>
<td>Willingness to spend time with other group</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td>Control</td>
<td>2.17</td>
<td>2.83</td>
<td>2.93</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>(0.99)</td>
<td>(1.15)</td>
<td>(1.31)</td>
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<tr>
<td>Treatment</td>
<td>1.63</td>
<td>2.93</td>
<td>2.53</td>
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<tr>
<td>Standard deviation</td>
<td>(0.76)</td>
<td>(1.14)</td>
<td>(0.97)</td>
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<td>0.67</td>
<td>0.16</td>
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</table>

*, **, *** indicate rejection of the null hypothesis at the 10%, 5%, and 1% level respectively
response mean is about 0.40 lower than that of the control group, this is only marginally significant in the one-side t-test (p-value of 0.09) and insignificant with the Wilcoxon rank-sum test (p-value of 0.16). We summarize our next two results.

Result III: Local Malawians’ willingness to spend time with Chinese migrants is positively impacted by actual contact but not impacted by imagined contact. We confirm hypothesis H4 but reject hypothesis H5.

Result IV: Chinese migrants’ willingness to spend time with local Malawians is not affected by actual contact. We reject hypothesis H6.

Lastly, we address the hypothesis that positive changes in attitude and behavioral intentions resulting from contact are sustainable for the ten days between contact and our follow-up. In Table 3, we report the mean and standard deviations of responses from our initial experiments and their follow-ups. We also report the counts of individual responses that increased, remained the same, and decreased from the initial to follow-up study. We provide two tests for response stability. First, we report a one sided paired t-test for which the null is the initial and response means are the same versus the alternative that the initial response is lower, i.e. average responses in the follow-up are less positive. Second, we report the similar non-parametric Wilcoxon matched pair signed test.

The statistics and hypothesis tests reflect strong stability in responses across experiments, treatments, and groups. One of our main research questions is how persistent are successful con-

<table>
<thead>
<tr>
<th>Table 3: Time effects statistics and hypothesis tests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A: General attitude toward other group</strong></td>
</tr>
<tr>
<td><strong>Initial</strong></td>
</tr>
<tr>
<td>Mean Direct Treatment: 1.90</td>
</tr>
<tr>
<td>Mean Imagine Treatment: 2.70</td>
</tr>
<tr>
<td>Mean Chinese Direct Treatment: 2.37</td>
</tr>
<tr>
<td>Std. Dev. Direct Treatment: 0.96</td>
</tr>
<tr>
<td>Std. Dev. Imagine Treatment: 1.09</td>
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<tr>
<td>Std. Dev. Chinese Direct Treatment: 0.96</td>
</tr>
<tr>
<td><strong>Follow-up</strong></td>
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<tr>
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</tr>
<tr>
<td>Observations Imagine Treatment: 30</td>
</tr>
<tr>
<td>Mean Direct Treatment: 2.76</td>
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<tr>
<td>Mean Imagine Treatment: 28</td>
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<tr>
<td>Mean Chinese Direct Treatment: 2.76</td>
</tr>
<tr>
<td>Std. Dev. Direct Treatment: 0.96</td>
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<tr>
<td>Std. Dev. Imagine Treatment: 0.20</td>
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<tr>
<td>Std. Dev. Chinese Direct Treatment: 0.91</td>
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<tr>
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<tr>
<td><strong>Panel B: Willingness to spend time with other group</strong></td>
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<td>Mean Direct Treatment: 1.63</td>
</tr>
<tr>
<td>Mean Imagine Treatment: 2.93</td>
</tr>
<tr>
<td>Mean Chinese Direct Treatment: 2.53</td>
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<tr>
<td>Std. Dev. Direct Treatment: 0.76</td>
</tr>
<tr>
<td>Std. Dev. Imagine Treatment: 0.98</td>
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<td>Std. Dev. Chinese Direct Treatment: 0.64</td>
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<td><strong>Count</strong></td>
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<td>z-stat Imagine Treatment: -1.00</td>
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<td>z-stat Chinese Direct Treatment: 0.13</td>
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<tr>
<td>p-value Direct Treatment: 0.42</td>
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</table>
tact interventions? Accordingly, we focus on the two positive treatment effects. With exogenous exposure to actual contact, the local Malawians’ willingness to spend time with migrant Chinese mean response was initially 1.63, and this increased slightly to 1.77. Twenty of the respondents did not change their response, seven increased their response, and three even reduced their response. With this stability it is not surprising that we fail to reject the null hypotheses of both tests. With exogenous exposure to actual contact, Chinese migrants’ mean response to the attitude question was 2.37, and the follow-up was 2.76. This nominal degradation in attitude is not significant according to our hypothesis test, but is still concerning none the less. Cautiously we can offer our final result.

Result V: The positive impact resulting from actual contact on local Malawians willingness to spend time with Chinese migrants, and Chinese migrants’ attitude towards local Malawians persists for at least 10 days. Thus we conditionally confirm $H_7$.

5 DISCUSSION

In this study, we have reported the results of experiments testing the effects of actual and imagined contact on cognitive responses and behavioral intentions, toward an in-group or out-group, as a means to ameliorate the effect of in-group bias on negative economic outcomes. Features of the study are that we (a) tested the effect of actual and imagined contact; (b) tested the contact hypothesis from the perspective of a socially superior in-group and socially inferior out-group; (c) use outcome measures that tap both cognitive and behavioral responses to contact; and (d) assess the stability of the cognitive and behavioral responses over time. If behavioral intentions are mechanisms through which cognition spills into behavior, then understanding how contact influences intentions is an important step forward in understanding the broader dynamics of Allport’s (1954) contact hypothesis. Consistent with this view, Crisp, Husnu, Meleady, Stathi and Turner (2010) argued that people’s willingness to seek out future contact experiences should be an important consideration of any intervention designed to promote positive intergroup relations.

Our first major finding, which is from the actual contact experiment, is that the cognitive and behavioral response of the majority-status in-group and minority-status out-group differed following actual contact. We found that Malawian subjects in the treatment group reported a significantly greater willingness than those in a control group to spend time with the Chinese migrant shopkeepers. This finding adds to a relatively small body of literature in social psychology examining the effects of contact on intentions. Consistent with results reported by Christ, Hewstone, Tausch, Wagner, Voci, Hughes and Cairns (2010), Tam, Hewstone, Kenworthy and Cairns (2009) and Wagner, Christ and Pettigrew (2008), subjects in our study were more likely to report a willingness to spend time with the identified out-group, following a pleasant and cooperative contact event, suggesting that even the simplest forms of contact, such as completing a jigsaw puzzle, have the capacity to influence intentions. However, we find that completing the jigsaw puzzle has no effect on the attitude of Malawian subjects towards their Chinese counterparts. The findings for the Chinese shopkeepers from the actual contact experiment were the reverse to the Malawian participants in the actual contact experiment; namely, actual contact evinced a change in attitude among Chinese shopkeepers toward their Malawian counterparts, but those in the treatment group did not express an intention to spend time with Malawians.

Why is there an asymmetric effect of actual contact for local Malawians and Chinese im-
migrants? An obvious starting point would be to think of the differences between the groups in both economic and cultural attributes. Consider why the Malawian shopkeepers’ attitude towards the Chinese does not change, but their willingness to spend time does. There are several possible channels for the perceived value from spending time with the Chinese: the possibility to imitate strategies of those more economically successful; access to social networks can provide more business opportunities; and the ability to receive technology transfers. Actual contact could increase the perceived value of these channels, and none of these rely upon an improved assessment of status, or decreased social distance, which likely improve attitude.

Why does actual contact improve the Chinese attitude towards the Malawians but not increase the willingness to spend time with them? We conjecture that from the more prosperous economic position the Chinese migrants do not perceive similar economic benefits from spending time with their Malawian counterparts. Or, that a stronger tradition of insular social and business interactions makes this group more resistant to behavioral change. Thus, while actual contact gives them a more positive impression of Malawians in general, the increase in intrinsic value of their company, and lack of perceived economic benefits of interaction aren’t not sufficient to change intended behavior.

While the ideal finding in terms of reducing prejudice would be that actual contact had a positive effect on attitudes and behavioral intentions for both groups, it is arguable that behavioral intention is more important than attitudinal change, given that it is manifest in the form of willingness to actually seek out future contact. It is one thing to facilitate attitude change, it is another to change behavior, and the latter has to be more important in contributing to an ongoing process to reduce in-group bias. Given moves to reduce labor market and schooling discrimination and increase social inclusion of out-groups has to start with behavioral change from the in-group.

From a public policy perspective, it is likely that the fact that actual contact results in a change in behavioral intentions among the majority status in-group is likely to have broader positive effects in ameliorating the negative economic effects of in-group favoritism.

Recent research has called for studies that investigate whether changes in emotional responses are persistent over time (Brambilla, Ravenna & Hewston 2012). A particular strength of our study is that we tested the effects of the different contact media – actual and imagined contact – on cognitive and behavioral outcomes, both immediately after the contact event, and again ten days later to assess the persistence of any change in behavioral intentions. This is important because if positive interventions to reduce the adverse economic effects of identity-based favoritism are to be effective, there should be some evidence of lasting impact. Our second major finding was that positive treatment effects were persistent. In follow-up surveys, we found the significant effect of actual pleasant and cooperative contact on attitude change for Chinese participants and behavioral intentions for Malawian participants, persisted ten days after the actual contact event. This result is hence suggestive of the power of actual contact, to effect lasting changes in attitude and behavioral intention, although these differ across the in-group and out-group.

Our third major finding in terms of the effect of imagined contact was that there was no significant difference in willingness to spend time with the Chinese migrant shopkeepers between those Malawians randomly selected into the treatment group, and those randomly selected into the control group. In follow-up surveys ten days after the imagined contact event, subjects in both the treatment and control groups reported almost identical mean scores to their T1 scores on the measure of willingness to spend time with the Chinese shopkeepers, suggesting that the null effect of imagined contact persisted over this time frame.
Why has imagined contact had no effect on attitude or behavioral intentions in the context of the current study? A likely reason for the lack of effect may simply be that the social divide between Malawian locals and Chinese migrants in Malawi is so wide, that a single imagined contact event does not have sufficient power to effect changes in either attitude or behavioral intention. Turner and Crisp (2010) acknowledged that imagined contact might not be as powerful or as long lasting as face-to-face contact, based on the notion that actual experiences produce stronger attitudes than indirect experiences (Stangor, Sullivan & Ford 1991). Where actual and imagined contact has been studied concurrently, actual contact typically shows stronger effects on attitudes (Paolini, Hewstone & Cairns 2007), consistent with this conjecture.

Like most field experiments there should be natural skepticism of internal validity. However, in this case the internal validity is informative of an important practical economic phenomenon and provides positive policy direction. As part of China’s rise as an economic superpower, China’s engagement with Africa is emerging as an important economic and political phenomenon. China’s entry into Africa is part of a long-term strategy. However, there is mistrust in some African nations about the true intent of the Chinese (Davies 2008), and such mistrust has the capacity to act as a barrier to broader acceptance of the Chinese model of development as an alternative to the Washington Consensus. This mistrust has been a source of African political forces pushing back against China’s strategy. For example, in 2011, Michael Sata, the leader of the largest opposition party, Patriotic Front, made resistance against Chinese ‘exploitation’ of Zambia’s natural resources and workforce a key campaign platform (McGreal 2007; Palitza 2011).

Chinese shopkeepers, such as those recruited for the current study, are a significant component of the interface between the Chinese development model and the everyday Malawians. If Malawian shopkeepers have more positive behavioral intentions toward their Chinese counterparts, they may be more likely to support the broader, higher-level ambitions of the Chinese government. That actual contact facilitates change in the behavioral intentions of these Malawians toward the Chinese shopkeepers, and that the change is stable, has important practical implications. Where mistrust and anxiety about the perceived true objectives of the Chinese exists, our results suggest that there is a foundation for addressing it.

Acknowledgements
We are grateful for the generous support our study received from the Office of the District Commissioner of Lilongwe. We thank the leaders of the Community of Chinese Businessmen, Malawi, for granting access to their community, and for fruitful collaboration. We thank our project associates Lonnie Mwamlima and Tiantian Lin for their dedication, which made the fieldwork and data collection a success. We also thank Marumbo Munyenyembe for key contributions to the fieldwork, not least in the form of logistical support. Annika Mueller acknowledges funding from WISE, Xiamen University.

REFERENCES


APPENDIX: EXPERIMENTAL QUESTIONNAIRES AND SCRIPTS

QUESTIONNAIRE FOR PARTICIPANTS OF MALAWIAN ORIGIN

1. Demographic information
Which year were you born in? ____________
Your gender: Male Female
Your marital status: Single (never married) Married Divorced or separated Widowed
What level of education have you completed? No formal education Primary school Secondary school Vocational training Bachelor degree Post-graduate degree
What is your occupation? ________________________________
What is your average monthly income? __________________
On average, how many hours per day do you work? _______
On average, how many days per week do you work? ______
How many dependent children do you have? _______
If you have dependent children, how many currently live with you? _______

2. Your dyad partner
His/her last name: _______________________________________

3. Circle the word that best sums up your thoughts about Chinese migrants in Malawi
My general attitude toward Chinese migrants in Malawi is ...
very positive positive neutral negative very negative
If I could, I would enjoy spending my spare time with Chinese migrants very true true neutral untrue very untrue

IMAGINED CONTACT SCRIPTS AND COMPLIANCE QUESTIONS

Imagined contact condition
We are interested in people’s ability to imagine and visualize events. We would like you to spend the next 10 minutes imagining yourself meeting a Chinese shopkeeper for the first time. Together you will climb to the top of Mount Mulanje together. You meet the shopkeeper and a guide in the market. You
shake the shopkeeper’s hand and you exchange names. Imagine the Chinese shopkeeper’s appearance. In the market you buy provisions to take on your trip together. After passing the first meadow, you enter the woods and must cross a stream. You help each other to balance and walk across large rocks to do this. Then you cross tea plantations as the slope gets steeper. You help take photos of each other and share water and snacks. After the tea plantations, the slope grows steeper. You and the Chinese shopkeeper help each other over large rocks and up steep paths. After three hours you reach the summit. To celebrate your achievement, one of you cooks a lunch you enjoy together, and the other cleans the pots and dishes. Finally you take photos of each other and the guide takes photos of you together with the Chinese shopkeeper.

After ten minutes ask the following questions

1. Have you climbed Mount Mulanje before?
2. Was the shopkeeper male or female?
3. How old was the shopkeeper?
4. What country was the shopkeeper from?
5. Name something specific you bought in the market place?
6. Was the weather sunny, cloudy, or rainy?
7. Did you take a photo together in the tea plantation?
8. Which of you cooked the lunch?
9. What did you have for lunch?
10. How long did it take for you two to climb the mountain?

Control condition

We are interested in people’s ability to imagine and visualize events. We would like you to spend the next 10 minutes imagining yourself meeting a Malawian shopkeeper for the first time. Together you will climb to the top of Mount Mulanje. You meet the shopkeeper and a guide in the market. You shake the shopkeeper’s hand and you exchange names. Imagine the shopkeeper’s appearance. In the market you buy provisions to take on your trip together. After passing the first meadow, you enter the woods and must cross a stream. You help each other to balance and walk across large rocks to do this. Then you cross tea plantations as the slope gets steeper. You help take photos of each other and share water and snacks. After the tea plantations, the slope grows steeper. You and the Malawian shopkeeper help each other over large rocks and up steep paths. After three hours you reach the summit. To celebrate your achievement, one of you cooks a lunch you enjoy together, and the other cleans the pots and dishes. Finally you take photos of each other and the guide takes photos of you together with the Malawian shopkeeper.

After ten minutes ask the following questions

1. Have you climbed Mount Mulanje before?
2. Was the shopkeeper male or female?
3. How old was the shopkeeper?
4. What country was the shopkeeper from?
5. Name something specific you bought in the market place?
6. Was the weather sunny, cloudy, or rainy?
7. Did you take a photo together in the tea plantation?
8. Which of you cooked the lunch?
9. What did you have for lunch?
10. How long did it take for you two to climb the mountain?
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